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January, 1963 VOLUME XXXII • NUMBER 1

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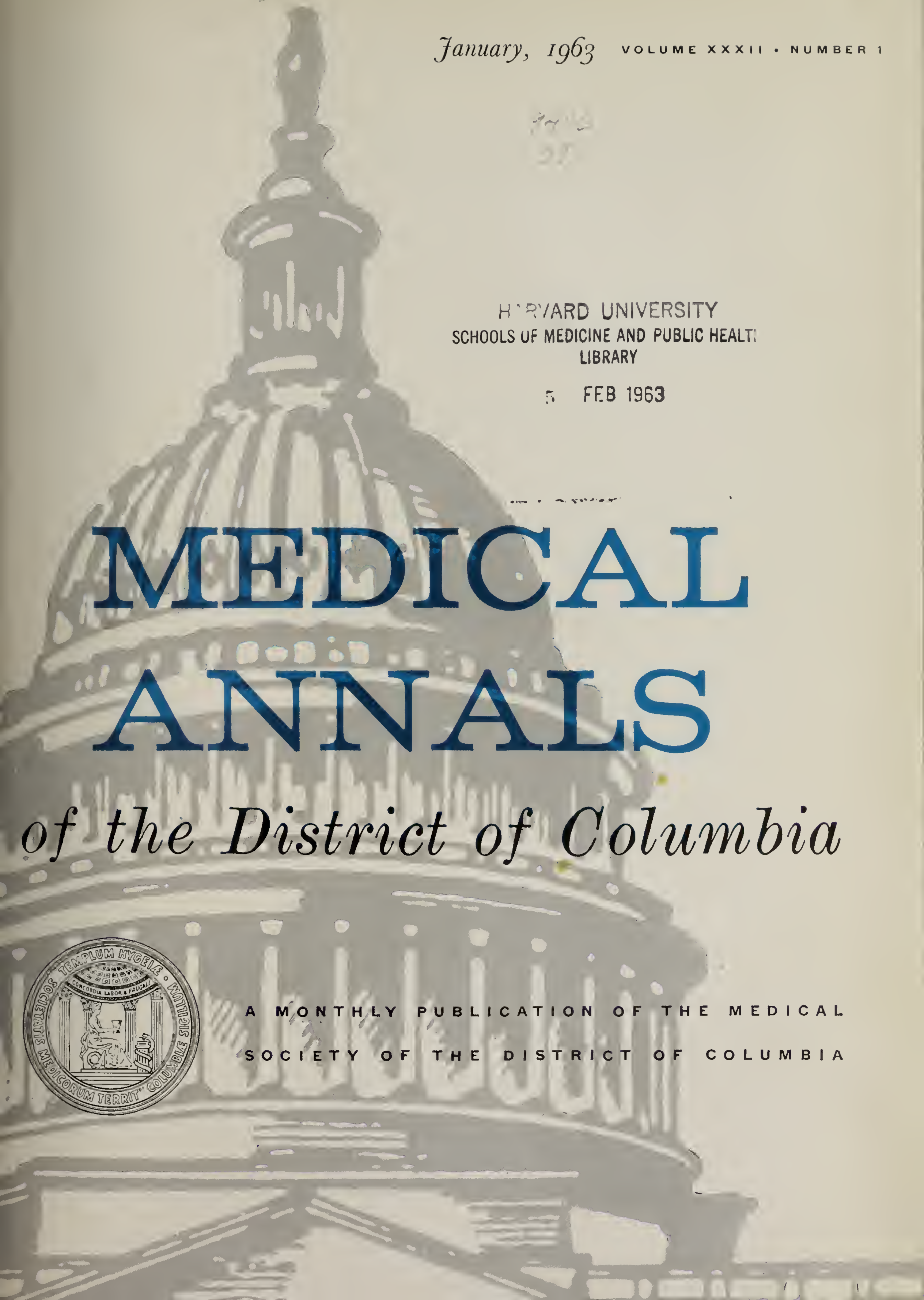

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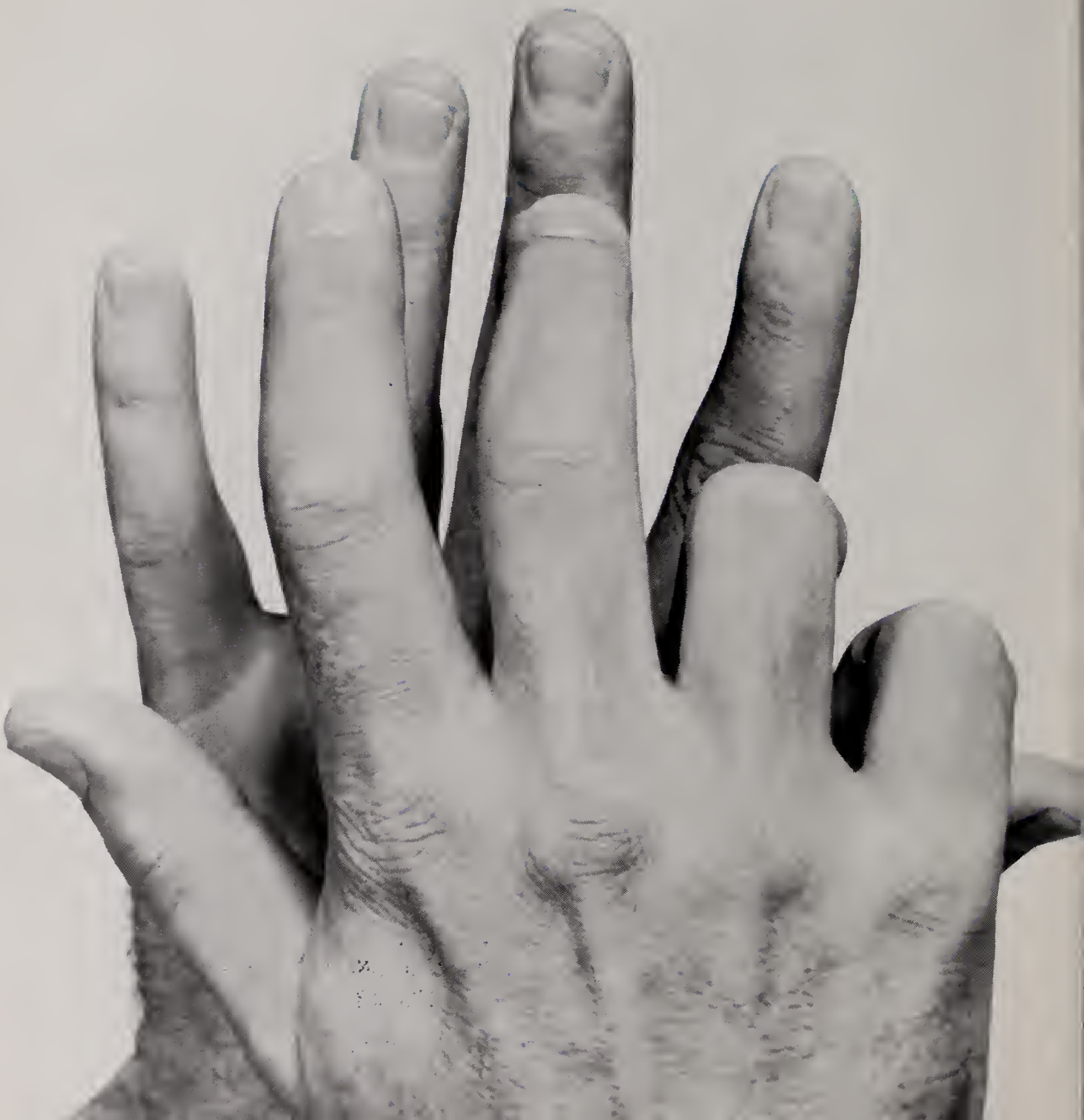

In Friedlander's Pneumonia[3,13]

Although the prognosis in Friedlander's pneumonia is poor, treatment with CHLOROMYCETIN has shown a good response when susceptible strains of *Klebsiella pneumoniae* are incriminated.

In *Hemophilus Influenzae* Pneumonia[3,4,13,14]

Because the invading organism is usually sensitive to CHLOROMYCETIN, this agent is generally effective in pneumonias caused by *H. influenzae*.

In Staphylococcal Pneumonia[1-8,13]

CHLOROMYCETIN continues to remain effective against many resistant strains of staphylococci, and—alone or in combination with other antibiotics—should be considered when other antistaphylococcal drugs are ineffective.

In Acute Epiglottitis[4,10,11]

This condition is most often caused by *H. influenzae,* most strains of which are sensitive to CHLOROMYCETIN. Therapy should be instituted at once, since the disease may progress from the first symptoms to a severe respiratory obstruction in four to six hours.

In Pneumonias Due to Gram-negative Bacilli[9]

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The infiltrating lesions of staphylococcal empyema are often difficult to eradicate. While CHLOROMYCETIN should only be used when the infection has been resistant to treatment with other antistaphylococcal drugs, therapy with CHLOROMYCETIN, in conjunction with surgical procedures, will often bring favorable results.

CHLOROMYCETIN (chloramphenicol, Parke-Davis) is available in various forms, including Kapseals® of 250 mg., in bottles of 16 and 100. See package insert for details of administration and dosage.

Warning: Serious and even fatal blood dyscrasias (aplastic anemia, hypoplastic anemia, thrombocytopenia, granulocytopenia) are known to occur after the administration of chloramphenicol. Blood dyscrasias have occurred after both short-term and prolonged therapy with this drug. Bearing in mind the possibility that such reactions may occur, chloramphenicol should be used only for serious infections caused by organisms which are susceptible to its antibacterial effects. Chloramphenicol should not be used when other less potentially dangerous agents will be effective, or in the treatment of trivial infections such as colds, influenza, or viral infections of the throat, or as a prophylactic agent.

Precautions: It is essential that adequate blood studies be made during treatment with the drug. While blood studies may detect early peripheral blood changes, such as leukopenia or granulocytopenia, before they become irreversible, such studies cannot be relied upon to detect bone marrow depression prior to development of aplastic anemia.

References: (1) Thacher, H. C., & Fishman, L.: *J. Maine M. A.* **52**:84, 1961. (2) Hopkins, E. W.: *Postgrad. Med.* **29**:451, 1961. (3) Hall, W. H.: *M. Clin. North America* **43**:191, 1959. (4) Krugman, S.: *Pediat. Clin. North America* **8**:1199, 1961. (5) Ede, S.; Davis, G. M., & Holmes, F. H.: *J.A.M.A.* **170**:638, 1959. (6) Wolfsohn, A. W.: *Connecticut Med.* **22**:769, 1958. (7) Calvy, G. L.: *New England J. Med.* **259**:532, 1958. (8) Hendren, W. H., III, & Haggerty, R. J.: *J.A.M.A.* **168**:6, 1958. (9) Cutts, M.: *Rhode Island M. J.* **43**:388, 1960. (10) Berman, W. E., & Holtzman, A. E.: *California Med.* **92**:339, 1960. (11) Vetto, R. R.: *J.A.M.A.* **173**:990, 1960. (12) Sia, C. C. J., & Brainard, S. C.: *Hawaii M. J.* **17**:339, 1958. (13) Rosenthal, I. M.: *GP* **17**:77 (March) 1958. (14) Gaisford, W.: *Brit. M. J.* **1**:230, 1959.

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1. Tainter, M. L., and Buchanan, O. H., Ann. N. Y. Acad. Sc. 58:438, 1954.
2. Pinparker, B. D., Panstian, F. F., Roth, J. L. A. and Bockus, H. L., Gastroenterology 40:397, 1961.

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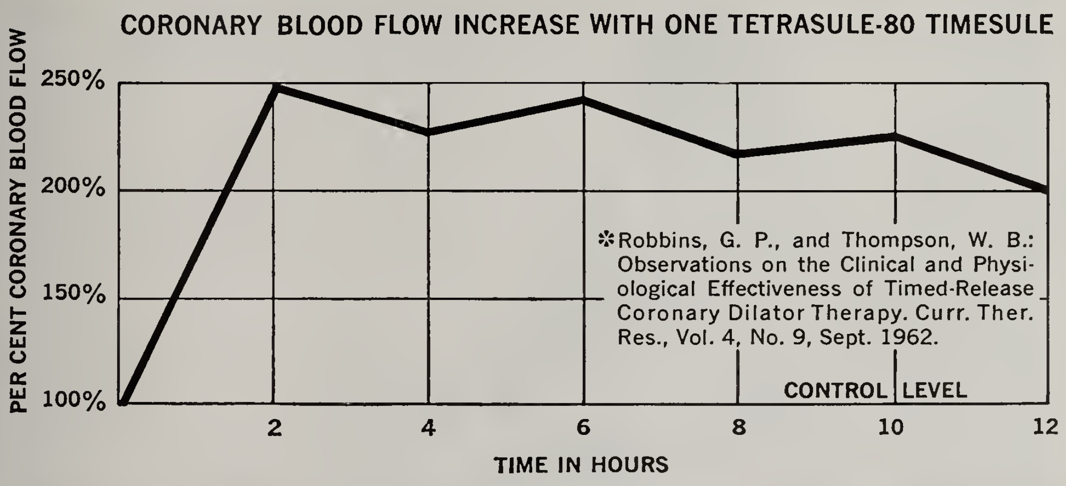

✲Robbins, G. P., and Thompson, W. B.: Observations on the Clinical and Physiological Effectiveness of Timed-Release Coronary Dilator Therapy. Curr. Ther. Res., Vol. 4, No. 9, Sept. 1962.

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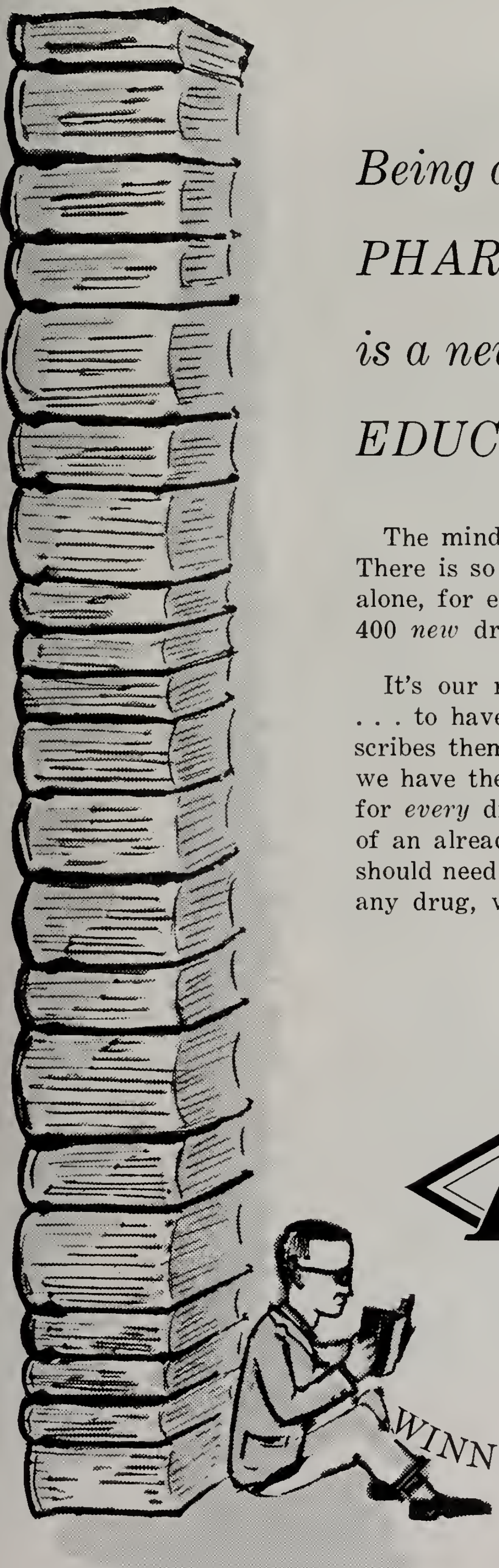

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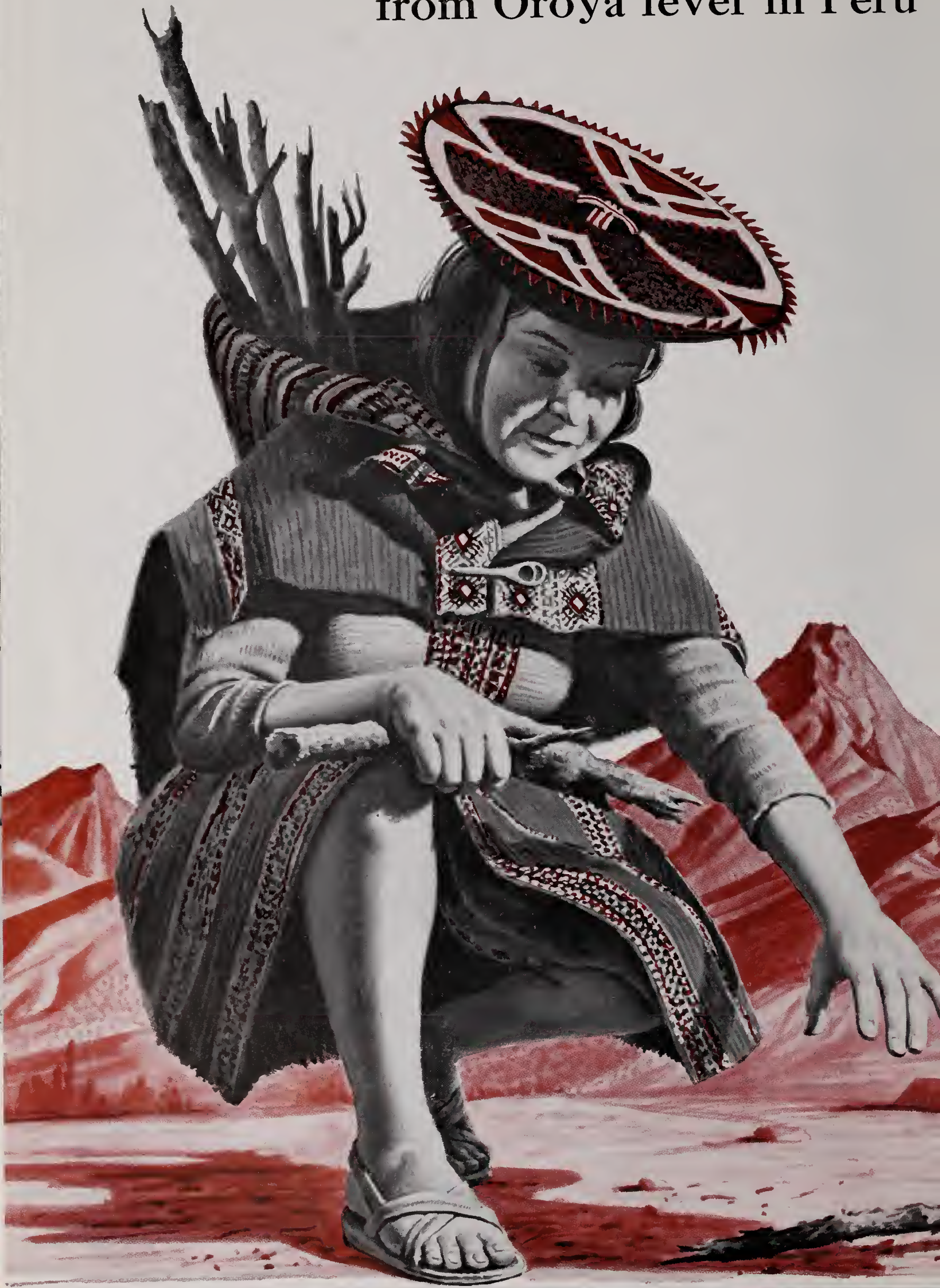

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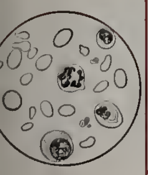

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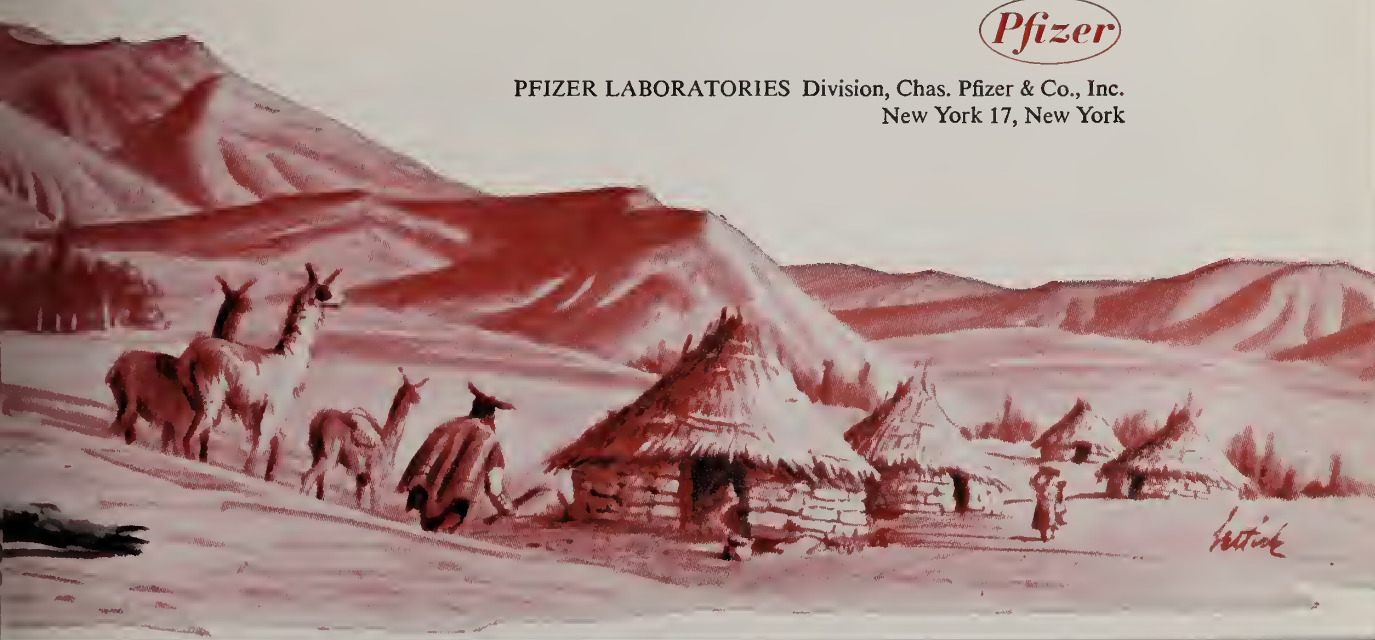

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*Schwartz, I. R.:
Current Therap. Res. 3:29, Feb., 1961.

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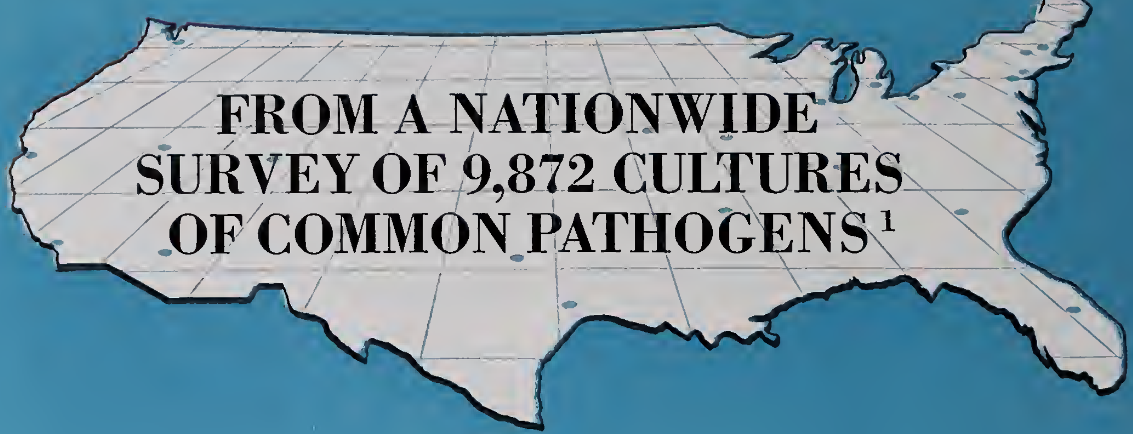


FROM A NATIONWIDE SURVEY OF 9,872 CULTURES OF COMMON PATHOGENS[1]

Conclusions of Nationwide Survey: *Report I*

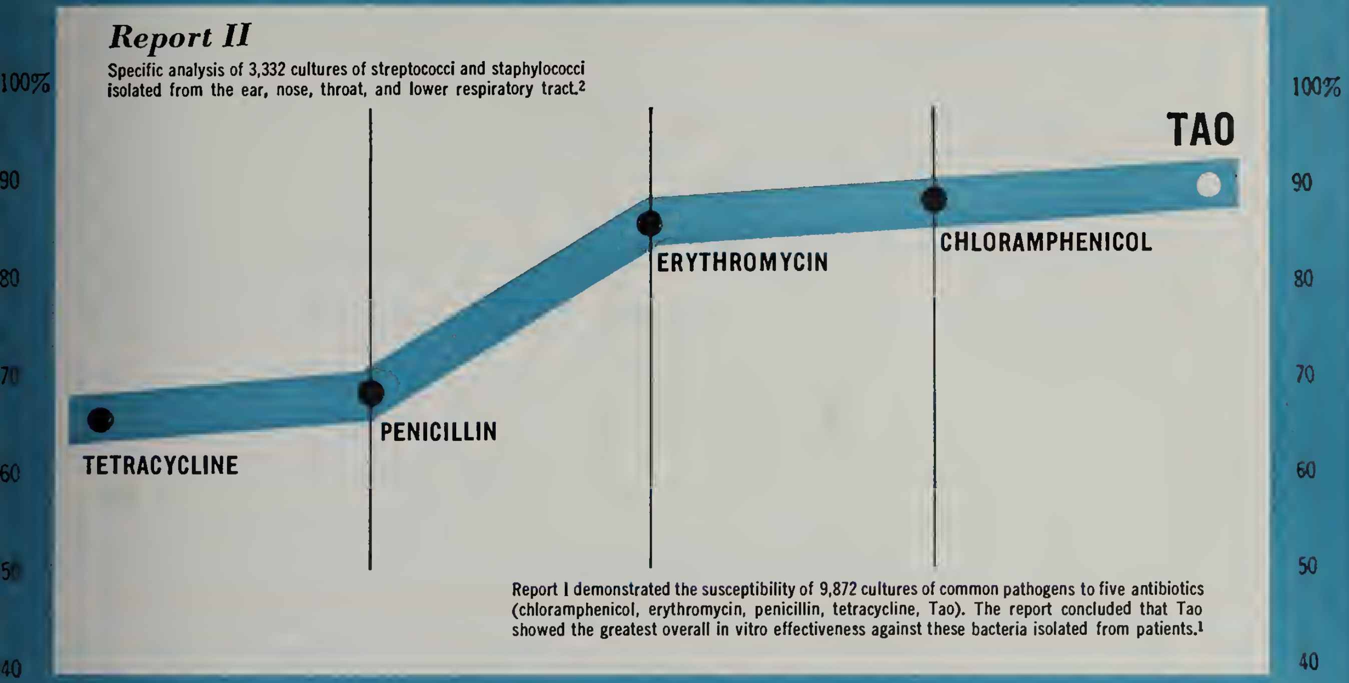
1. **Even after five years of general use,** Tao, of the antibiotics tested, demonstrated greatest activity against respiratory streptococci and staphylococci (3,332 cultures).

2. **Overall results showed a higher percentage of susceptibility** among these common pathogens to Tao than to the other antibiotics. Susceptibility to Tao was greatest, not only in respiratory streptococci and staphylococci, but also in these organisms isolated from skin and soft tissue (3,423 cultures), genitourinary and gastrointestinal tracts and other sources (2,458 cultures). Susceptibility was equal to all antibiotics tested in pneumococci from unspecified sources (463 cultures), and less to Tao in H. influenzae from unspecified sources (196 cultures).

3. **Tao has been used for five years without development of predictable cross resistance.** In 1958 and 1961, approximately 73% and 70%, respectively, of erythromycin-resistant problem staphylococci showed susceptibility to Tao.[3,4] The present study confirms the continuing high degree of Tao activity even against these pathogens. Of 1,592 cultures of erythromycin-resistant staphylococci, 68% were susceptible to Tao, while in the reverse situation, only 33% of 768 Tao-resistant staphylococci were susceptible to erythromycin.

Report II

Specific analysis of 3,332 cultures of streptococci and staphylococci isolated from the ear, nose, throat, and lower respiratory tract.[2]



Report I demonstrated the susceptibility of 9,872 cultures of common pathogens to five antibiotics (chloramphenicol, erythromycin, penicillin, tetracycline, Tao). The report concluded that Tao showed the greatest overall in vitro effectiveness against these bacteria isolated from patients.[1]

Report II

Results of Bacterial Susceptibility in 3,332 Respiratory Pathogens

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1. "Bacterial Susceptibility Patterns: A Geographic Survey." Fowler, J. Ralph, M.D., and Watters, John L., M.D. Scientific Exhibit presented at the Annual Meeting of the American Society of Clinical Pathologists, Chicago, Ill., August 31 to September 9, 1962. 2. Fowler, J. Ralph, Watters, John L. and Levy, Arthur M.: Bacterial Susceptibility Patterns as Related to Geographic Variation and Anatomical Source. In press. 3. English, A. R., and Fink, F. C.: Antibiot. & Chemother. 8:420 (Aug.) 1958. 4. English, A. R., and Fink, F. C.: Antibiot. and Chemother. 11:648 (Oct.) 1961.

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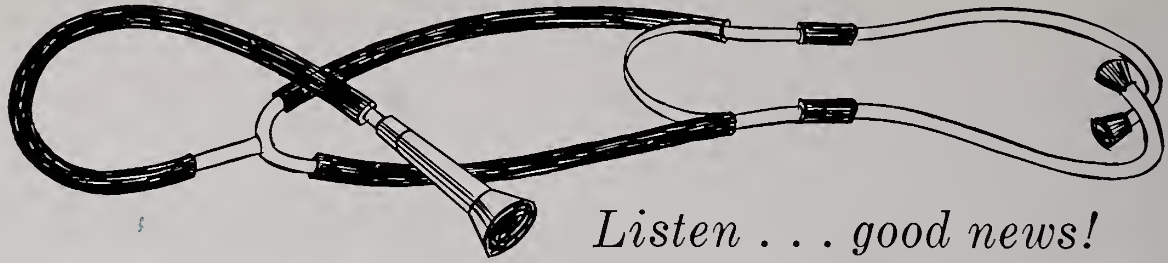

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BOOK REVIEWS

Peripheral Vascular Diseases, 3rd ed. Edgar V. Allen, M.D., M.S., F.A.C.P., Nelson W. Barker, M.D., M.S., F.A.C.P., and Edgar A. Hines, Jr., M.D., M.S., F.A.C.P. Price, $18.00. Pp. 1044, with 367 illustrations, 7 in color. Philadelphia: Saunders, 1962.

Ever since this classic textbook was first published in 1946 it has been regarded as the "bible" in the field of peripheral vascular disease. The new third edition is larger and more complete than its predecessors, and even more comprehensive in its coverage of the field in comparison to the two earlier editions.

This edition covers the entire field of vascular disease in its broadest sense, i.e., diseases of arteries, veins, and lymphatics distal to the heart. For the first time such subjects as cerebral arterial disease, modern concepts of blood coagulation and thrombosis, fibrinolysis, physiology of the circulation, the modern status of angiography, visceral aneurysms, and surgical treatment of extracranial cerebral arterial occlusion are presented.

In keeping with the intent of the authors that the book be an aid to students who are learning as well as to physicians who are treating peripheral vascular disease, this book continues to present historical background, physiology, pathology, symptoms, diagnosis, and treatment for each disease or group of diseases described. The thumbnail outlines of the lives of the great names in the history of this field of medicine are classics in their own right.

The material is presented in an orderly and pleasing fashion. There is an especially large section devoted to the surgical treatment of various arterial diseases, and a particularly interesting discussion of the surgical treatment of varicose veins.

This excellent reference text is recommended for practicing physicians and medical students alike.

Aaron G. Saidman, M.D.

Practical Anesthesiology. Joseph F. Artusio, Jr., M.D., and Valentino D. B. Mazzia, M.D. Price, $7.75. Pp. 318, with 28 illustrations. St. Louis: Mosby, 1962.

The avowed purpose of this volume is to serve as a handbook of current practices in anesthesiology for medical students, general practitioners, and nurse anesthetists. With this in mind, the authors have attempted to cover a great deal of territory in a little over 300 pages. This has resulted in some very startling omissions. Ethylene is dismissed in 4 lines and Syncurine® is not even mentioned. On the other hand, 4 pages are devoted to refrigeration anesthesia for extremities (an outmoded technique) and anesthesia for cardiovascular surgery is discussed at relative length. Attempts to deal with anatomic considerations in a simple fashion descend almost to the level of a high-school hygiene text.

On the other hand, "Basic Requirements" is a succinct and well thought-out chapter. "A Few Random Don'ts in Anesthesia" deserves to be committed to memory by certified specialist and tyro alike. However, it is a difficult task to complete a comprehensive work in anesthesiology in this era of startling, almost daily change, and the reviewer sympathizes with the authors' efforts.

T. F. McDermott, M.D.

Shock: Pathogenesis and Therapy, an International Symposium, Stockholm, 27th–30th June, 1961, sponsored by Ciba. Chairman: U. S. von Euler, Stockholm. Edited by K. D. Bock, Basle. Price, $13.00. Pp. 387, with 120 figures. Berlin: Springer-Verlag, 1962. Distributor: Academic Press, New York.

This book was very difficult for me to review even though I have had a special interest in the subject matter. It is very technical and mostly of interest to those doing basic or clinical research in various aspects of shock. The American authors in this Symposium are of world renown in their special fields of investigation. The non-United States authors are from Sweden, Germany, Great Britain, Hungary, the U.S.S.R., Norway, Italy, Switzerland, Denmark and France and are not known to me.

Because of the diverse types of shock reported and because of the many investigative approaches and special techniques, several investigators and clinicians might better review the book rather than one person. Being a clinician rather than an investigator, I found several of the papers difficult to interpret.

I thought that this Symposium would be an excellent review of basic science and clinical data referrable to a student paper I had written on burn shock. More practically, I found that the technicality of the Symposium made it very heavy reading and unsatisfactory reviewing. The opening remarks of the Chairman of the meeting, Dr. U. S. von Euler, indicated that while all the authors were experts and they were speaking to experts, a little more detail would be advantageous. I agree.

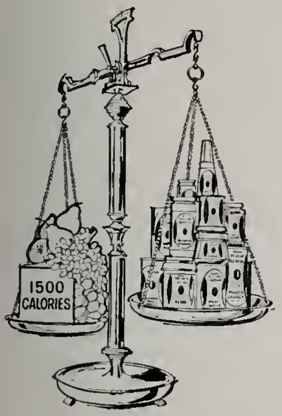
Elbert T. Phelps, M.D.

Problems in Surgery—from Surgical Grand Rounds at The New York Hospital-Cornell Medical Center. Frank Glenn, M.D. Edited by George E. Wantz, Jr., M.D. Price, $16.50. Pp. 512, with 263 illustrations. St. Louis: Mosby, 1961.

One hundred and fifty-two cases were selected from the Grand Rounds of the Department of Surgery at the New York Hospital-Cornell Medical Center as the basis for this volume. The cases selected cover both general surgical and surgical specialty practice. The presentations are brief, concise and well illustrated. The editors are to be commended on the absence of unnecessary material. Follow-up and long-range outcome are also included as well as several well chosen references for each case.

In general, the cases selected are those most fre-

(*Continued on page 28*)



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Book Reviews

(*Continued from page 26*)

quently seen in the surgical discipline. It presents several original viewpoints as well as a wealth of accumulated surgical knowledge. These factors, plus its brevity and clarity, make reading easy and enjoyable.

This volume should be of great value to the house officer and the busy surgical practitioner as a ready source of concise information.

S. J. Cosimano, Jr., M.D.

Abdominal Operations, 4th ed. Rodney Maingot, F.R.C.S., London. With special articles by 36 British and American contributors. Price, $29.50. Pp. 1402. New York: Appleton, 1961.

Maingot's "Abdominal Operations," fourth edition, represents a thorough revision of the previous editions, with the addition of several new chapters and marked improvement of the illustrations. It presents a detailed account of abdominal operations as practiced today, dealing with the choice of operations, the dangers and difficulties which sometimes arise during their performance, the pre- and postoperative care, the management of complications, the immediate and remote results of the various measures described, and many problems of abdominal surgery. It describes well the clinical, radiologic, pathologic and other aspects of the abdominal viscera.

The author has written most of the text himself, and ably, but has utilized several leading surgeons for chapters on subjects on which they are recognized authorities. The discussions of gastric, pancreatic, and portal surgery are particularly interesting, and the chapter on fluid balance is well written and easily understood.

This text is of particular value to resident surgeons, and assistants, as well as to abdominal surgeons everywhere who are interested in the present-day developments in surgery.

Luther W. Gray, M.D.

Fundamental Skills in Surgery. Thomas F. Nealon, Jr., M.D. Illustrated by Ellen Cole. Price, $8.50. Pp. 289. Philadelphia: Saunders, 1962.

This book is an enlarged manual of helpful hints and descriptions of the simple and useful technical procedures utilized by the young physician and surgeon. The book can be extremely useful to interns and residents who need to know accident or emergency room procedures. Many of the simple ones described may be found in various textbooks on medicine and surgery. The author has used many of the techniques for many years and is imparting them to the younger surgeon.

Chapters are included on the care of the surgical patient, the proper instruments to be used, operating-room conduct, and the type of sutures and dressings used in the hospital. There are also chapters on infection, minor surgery, care of burns, and wounds of the various areas of the body. The book is well illustrated with very clear, simple drawings that are easily understood.

It is to be remembered that this is not a complete textbook of surgery, but it does meet the needs of the young house officer and is a welcome addition to any hospital library.

Milton L. Goldman, M.D.

Electrocardiography: Fundamentals and Clinical Application, 3rd ed. Louis Wolff, M.D. Price, $8.50. Pp. 351, illustrated. Philadelphia: Saunders, 1962.

The third edition of this well known textbook of fundamental electrocardiography consists of the author's application of vectorcardiographic principles and explanations to the electrocardiograms originally illustrated in the second edition (1956). By this approach the basic fundamentals outlined in Part I become more readily understood. The main criticism is that these vector concepts are not applied to their fullest extent. Few loops are actually drawn; e.g., there are no illustrations of the loops of right or left bundle branch block, and the only actual vectorcardiogram included in the book is that of a normal man.

Part II is devoted to clinical application. The chapter on the normal electrocardiogram is good and includes some valuable tables, particularly in reference to children. The author's terminology of left and right axis deviation, however, includes some areas considered by many to be within normal limits. The criteria for left ventricular hypertrophy, listed in Chapter 21, page 166, would include many normal tracings. The chapters on the electrocardiographic changes in coronary heart disease are well written. The remaining chapters of Part II, concerning pericarditis, pulmonary embolism and electrolyte disturbance, are excellent, and the outstanding chapter of the book is that dealing with the Wolff-Parkinson-White syndrome.

Part III is concerned with normal and abnormal cardiac mechanisms. It has been expanded since the second edition and contains more complex arrhythmias. Those dealing with digitalis intoxication are especially well covered.

Overall, the book remains an accepted outline of fundamental electrocardiography made more easily understandable to the student by some incorporation of vectorcardiographic principles.

Richard B. Perry, M.D.

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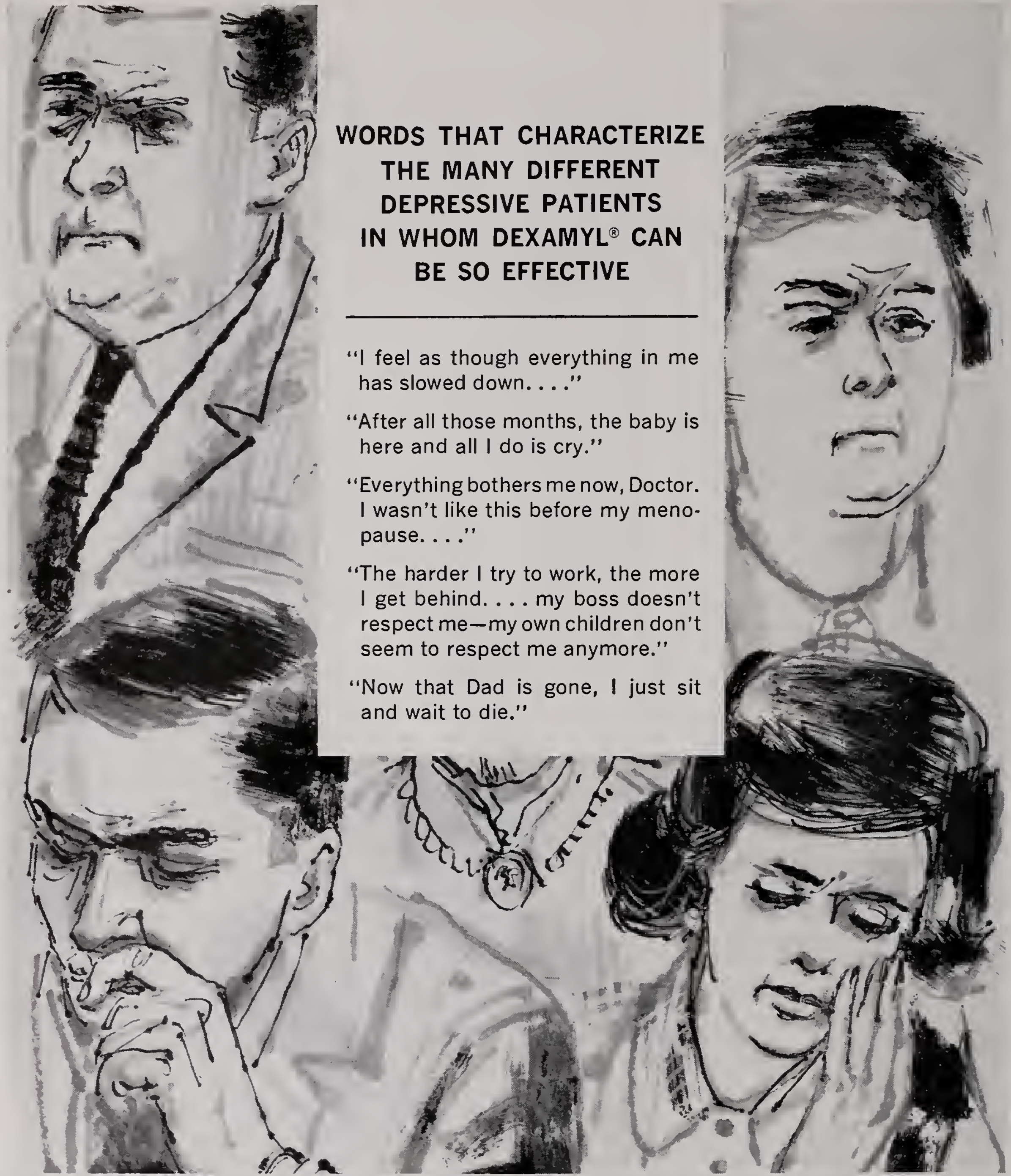

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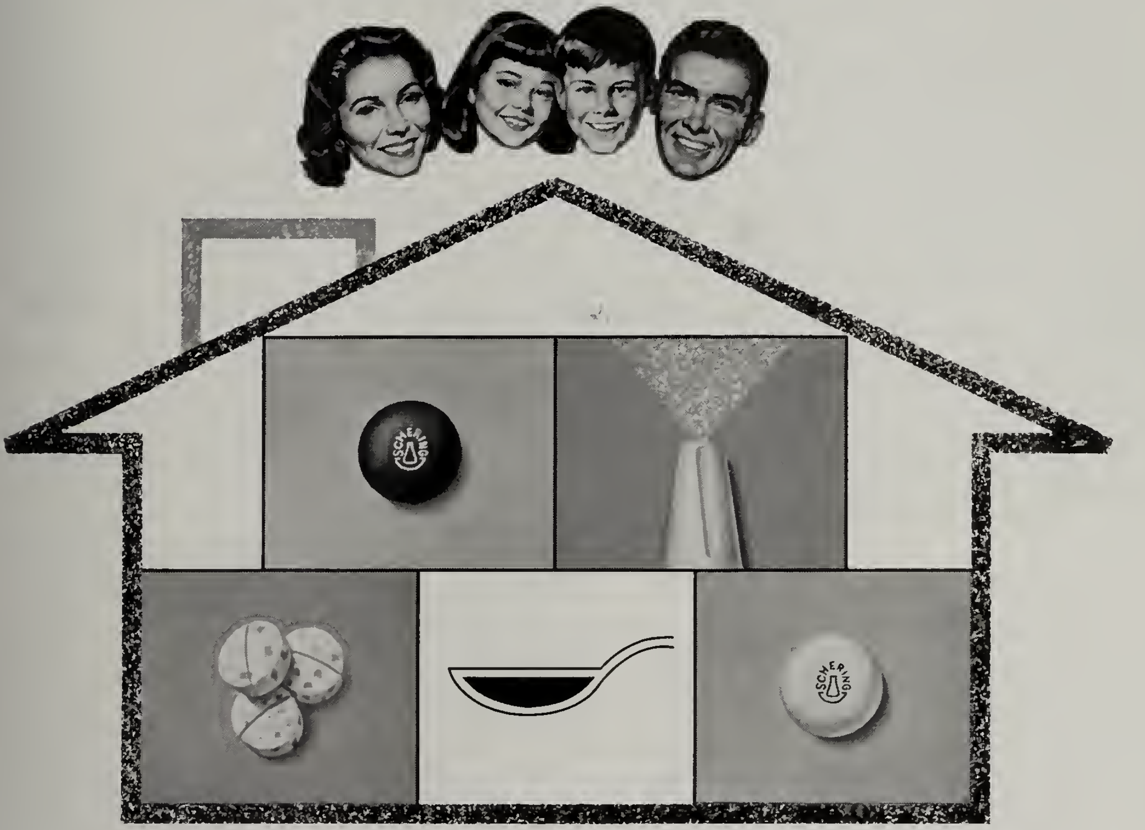

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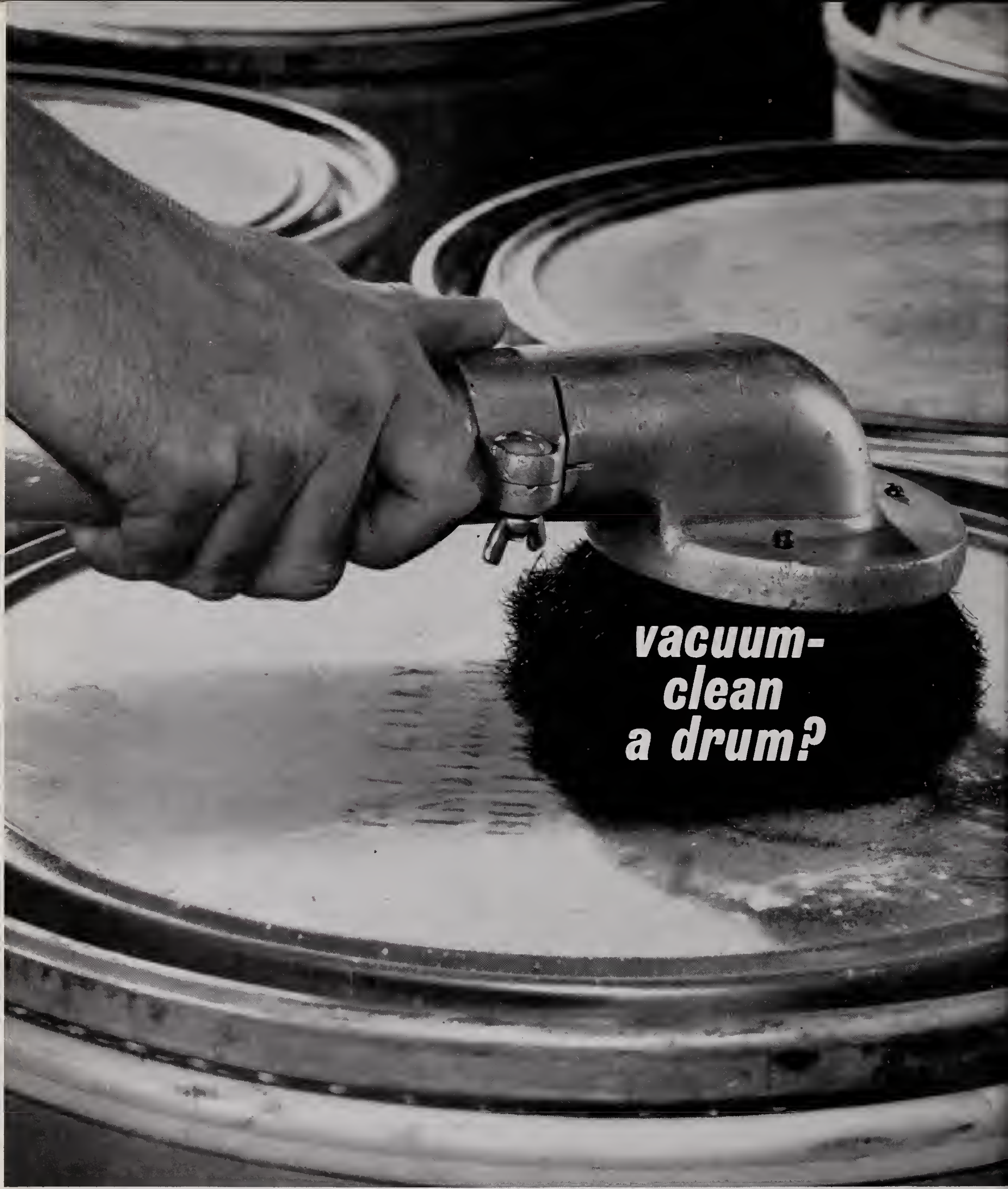

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Systemic Toxic Reactions to Soft Plastic Food Containers

A Double-blind Study

ELOISE W. KAILIN, M. D.
CLIFTON R. BROOKS, M. D.
Washington

A SERIES OF ARTICLES by Dr. Theron Randolph[1] appeared in the *Annals of Allergy* between May and August of 1961. These described persons who reacted in an unusual manner to small quantities of additive substances in food, clothing, and the inhalant environment. Such substances are considered to be well tolerated in the amounts ordinarily encountered. The patients affected reacted to a number of chemically dissimilar substances. Typical triggers of these unusual reactions were insecticide spray residues as on fruits and vegetables, lined tin cans or plastic refrigerator food and water containers, preservatives, pure food colors, and airborne residues from the combustion of gas as from ordinary lighted gas ranges. Reactions elicited included severe fatigue, mental confusion, emotional depression, psychoses, ataxia, headache, skin rashes, and gastrointestinal disturbances. Sometimes reactions more typical of allergy, such as asthma or rhinitis, resulted.

From October, 1961 to August, 1962 in one private allergy practice 14 patients have been seen who have this type of unusual intolerance. This communication concerns itself with a double-blind study designed to test the observations of certain of these patients that foods wrapped or contained in plastics did indeed elicit bizarre symptoms.

Method of Diagnosing Chemical Intolerance

The pattern of testing was geared to the diagnosis of an ambulatory patient living at home. Such a patient is specifically tested first for inhalant allergy and common food protein allergens and then for multiple chemical factors. To do this latter part of the study, for one week the individual is separated in so far as possible from known chemical irritants. Briefly, the program is set up so that the gas stove is turned off (where possible its pipe is capped and the stove is completely removed from the house). Any cooking in the house is done during the "clearing period" on electric appliances. Plastic or waxed food containers are not used; glass, china, pottery, aluminum foil, or stainless steel are substituted. Soaps are limited to Ivory Soap and pHisoderm®. A special kerosene-free detergent* is prescribed Clothing is limited to natural fibers, such as cotton, wool, or silk. Nylon, orlon, and dacron are not to be worn. Drip-dry cottons are undesirable, and any new garments are washed repeatedly to remove the sizing commonly present in new cloth. Water is limited to spring, well, or distilled water. Special foods are prescribed. In general these are foods that are grown without chemicals or sprays of any kind and are packaged in aluminum foil or all-glass containers. Paper is less desirable as a food container but may be used if necessary. All bleaches, ordinary detergents, floor waxes, shoe polish, paints, perfumes, nail polish and nail polish remover are removed and are not to be used by anyone in the house during the observation period because inhalation of solvents of any kind interferes with definitive testing. Smoking is prohibited. Medications of any kind and materials for application to the skin or mucosal surfaces are eliminated. These include all pills, ointments, contraceptives, cosmetics, deodorants, mouthwashes, and toothpastes.

---

* Amway powdered laundry detergent, a product of Amway Corporation, Ada, Michigan.

After a week of these restrictions a concentrated effort is made to see if a reaction can be elicited by exposure to the previously withdrawn substances. Thus, one adds foods high in content of insecticides, solutes from liners of cans, artificial colors, sweeteners and flavors, and residues of exposure to gas-cooking or processing. More specifically, the patient is instructed to return to gas-stove cooking, to resume the use of tap water, and to eat such things as canned, artificially sweetened blueberries and peaches, beet tops, white sugar, frozen broccoli, raw apples, celery, lettuce, dyed yams, ordinary butter, canned commercial salmon and tuna, or canned chicken. Ordinary articles of dress and cosmetics are allowed. At the end of three days, if there is no flare in symptoms, the consideration that this person is significantly bothered by chemical factors is dismissed. On the other hand, the original restrictions are to be promptly resumed if symptoms recur. After a further clearing period the suspect items would then be added back in separate categories to determine which are particularly offensive to the individual patient.

Report of Cases

Case 1. J. T. S., a 45-year-old housewife, was initially seen because of chronic fatigue, headaches, and dizzy spells. She had been dizzy for almost 4 weeks prior to this visit. Indigestion, looseness of the stool, heartburn, and bloating had troubled her for the past 2 years. Headaches and "bilious attacks" dated from childhood. She had avoided milk for 20 years because she associated its ingestion with the production of migraine-type headaches. She also had headaches related to nasal blockage and tenderness over the sinus areas. Her father and mother had had migraine headaches. Her migraine-type headaches were relieved by means of ergot.

A basic food elimination diet was followed by improvement within several days. By provocative addition of foods it was established that she reacted to wheat, oats, rye, rice, buckwheat, lemon, banana, tomato, white potato, onions, beef, fish, fowl, and egg. She also reacted to Poly-Vi-Sol® and Unicap® vitamins. Reactions consisted of headaches, unusual fatigue, and gastrointestinal symptoms or combinations of these. After 6 months on a highly restricted diet she was improved but still had uncomfortable symptoms. At this time she was studied for chemical factors. Again improvement was good within a few days. The introduction of tapwater was followed by the development of headache. Later, white cane sugar elicited an episode of severe fatigue. Offenders were subjected to repeated trials.

At the point at which her gas stove was turned on her story is as follows: "The gas stove was turned on by the gas man and the oven was lighted to bake potatoes at 5 in the afternoon. Within 30 minutes I felt mentally confused. By 7 o'clock I had a dull headache. I broiled a steak in the stove. Then I ate the steak and baked potato. After dinner I felt terrible. I couldn't think straight. I couldn't walk straight. It was like I was drugged. I walked into cabinets and broke dishes. By 10 o'clock I had a migraine headache. The next morning I was still dizzy." The change was so obvious that her husband, who up to now had felt that this was a pointless study, immediately agreed that despite financial pressures she would have to have an electric stove. When the gas was turned off she again noted lessening of her tiredness and was able to think clearly again. Within a few days to a week she became aware that suddenly she was free of many vague fears and was not afraid of driving or of meeting new people and no longer had exaggerated fears for her children's safety. This had been a years-long state that she had thought was her personality. There have been accidental exposures to gas since this time. She made a trip to her church with a special message for a friend. She found this friend in the church kitchen. At the time she was not aware that coffee was being brewed. Within 10 minutes, as she put it, "I knew I'd have to leave. I felt confused. I couldn't remember what I had to say to that woman." Out in the open air she recovered within about 30 minutes.

By similar painful single trials it was learned that ordinary market vegetables were relatively well tolerated despite insecticide residues. They produced only mild symptoms of fatigue and confusion. A severe migraine headache followed exposure to ordinary household ammonia used in water solution. On another occasion, while she was feeling well, she was exposed to fumes of fresh oil paint. Her first symptoms were dullness and "feeling of stupidity." In a few minutes headache developed, followed closely by photophobia and inability to hold the eyes steady. Dizziness lasted for 6 days thereafter.

She could not tolerate any foods packaged in tin cans. Even unsprayed vegetables in such cans produced reactions which consisted of a feeling of a lump in the throat, the need to swallow frequently, coughing, and a desire to eructate. When foods known to be tolerated were stored in plastic containers in her refrigerator overnight and eaten the following day she also experienced these reactions. That such reactions could be delayed was suggested by one trial in which the reactions appeared some 12 hours later and persisted for 48 hours, at which point she felt dull, drugged, and experienced a headache.

Experimental Study, Case 1

A double-blind study was set up to test the ability of this patient to detect the presence of plastic contamination in foods. Uncontaminated carrots were obtained, washed in spring water, and peeled. Three or 4 small carrots were placed in each of 4 glass-lidded Mason jars. A common flexible polyethylene plastic bag* was placed in 1 jar. The 4 jars were given to the controlling physician, who let them stand overnight, then removed the piece of plastic, labeled the jars, and recorded the code. The labels used were drawings of a horse, a bird, a child, and a rabbit so that there could be no number prejudice to a random order of testing. The jars were taken by the testing physician and delivered to the patient. The patient ate the contents of 1 jar each morning on an empty stomach. She tested them on 4 successive days. Pulses were checked prior to and after test ingestion and showed no significant variations. Twenty-four hours after preparation of the samples she ate the contents of the jar marked "horse." Her notes read, "I began to feel a lump low in my throat within a half hour, and when I started to eat my breakfast an hour and one-half after I ate the carrot I had difficulty swallowing. In fact, I had to wash the first few mouthfuls down with water. This reaction was gone by lunch time." There were no symptoms following ingestion of the carrots in the other 3 jars. At this point the control physician opened his sealed envelope and confirmed that the jar marked "horse" had contained the plastic bag and that the other specimens were controls.

A second test was performed to confirm the first series, but the results were unexpected. Carrots were prepared in the same manner except that they were placed inside the soft plastic bags overnight. In addition, there were 2 days intervening between the time the carrot was removed from the plastic bag and the time the first test specimen was eaten. The patient took these test specimens on 4 successive days. She reported a reaction only to one specimen. This reaction, unlike that of the first series, occurred in the afternoon, several hours following the test ingestion. The symptoms were bloating of the abdomen and slight tightness of the throat. When the code was broken it was revealed that she had failed to identify the 2 active specimens and had reported a reaction following a control. The only explanation we could find for her false positive reaction was exposure to weed-killer spray the previous afternoon. The possibility was considered that a volatile factor from the plastic had been lost by evaporation from the test specimens because she had not identified carrots aged 2 and 4 days respectively following their contact with the plastic.

For the third series spring water was chosen as the test substance. Specimens (4 to 5 oz. in quantity) were picked up from the control physician and delivered to the patient for ingestion within the next 24 hours. The water was placed in a flexible polyethylene Freezette food container, and a new soft plastic Freezette food bag was put inside with the water. Water was allowed to remain in the plastic container until the day before each test. The water was replenished from time to time. The water was thus in contact with the plastic for a minimum of 3 days for the first specimen given and a maximum of not over 10 days for the last. Additive-free apple juice was added to each of the 5 specimens just before presentation to the patient to disguise any taste the plastic might impart. One specimen was discarded from the series by the testing physician prior to code disclosure because the patient was recovering from a migraine headache at the time. Two days intervened before the next specimen was taken. The patient reported no symptoms from any specimen (including the discard) except slight tightness in the throat and heartburn after the final specimen. The code was broken, revealing that only a barely perceptible reaction occurred to a specimen which had been incubated in a plastic container for something less than 10 days and none to a specimen incubated 3 days. All other specimens were controls. There was only 1 false positive reported for 12 (or 13, if the discard is included) unknowns.

If we exclude test specimens separated from contact with plastic for 2 days or more, she had correctly identified 2 of 3 active specimens and had correctly identified 6 of 7 controls.

The thought occurred that a fat or protein material might contain the plastic factor more efficiently and hold it for longer than plain water. Testing on this particular patient, however, was interrupted at this point.

Case 2. J. L., a 44-year-old woman, had allergic vasomotor rhinitis since childhood. She had an annual increase in symptoms from October to December. A diagnosis of rheumatoid arthritis had been made in 1941. Urticaria had followed an injection of B-complex vitamins. Monocaine® given by a dentist had been followed in 10 minutes by redness of the face, palpitation, and a feeling of suffocation. Skin tests for inhalants were negative. Elimination of colognes and perfumes proved helpful in controlling nasal discharge and relieving anosmia. Clinical testing disclosed specific hypersensitivity to many foods. Reactions were both usual and unusual in nature but could be reproduced at will. For instance, she developed watery rhinorrhea, headache, malaise and severe fatigue about 2 hours after the ingestion of wheat. Corn and rice produced both nasal reactions and flare of her arthritis. Blueberries and raspberries caused angio-edema of the lips and rhinitis. Within 4 hours after eating pineapple she developed headache, low backache, intestinal gassiness, severe fatigue, puffy eyes, and cloudy vision. An hour after eating bacon she felt elated or "speeded up." The following meal was pork chops and ham. The next day while enjoying a picnic with friends she suddenly became emotionally depressed. She contemplated suicide during this temporary depressed state.

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* Freezette bag, a product of Republic Molding Corporation, Chicago, Illinois.

Poly-Vi-Sol and Mi-Cebrin® reacted similarly to wheat. Dicalcium phosphate, U.S.P. plain unflavored tablets produced vasomotor rhinitis, ringing in the ears, headache, coughing and depression on repeated trials. After 1 week on spring water ordinary tap water was tested. Several hours later her vision became less distinct and she developed malaise and increased audible squeakiness of the joints of her neck. Tap water has been repeatedly tested with the same results.

A systemic study of chemical factors was then undertaken, and we established that she could not tolerate her gas stove or her gas clothes dryer. She became dull and stuporous after exposure to the normal use of these appliances.

Ordinary market beef was found to be tolerated. However, this same beef cooked over charcoal briquettes for a backyard picnic meal was followed by severe illness lasting 2 days. She had severe headache, malaise, abdominal bloating, blurred vision, and drowsiness. Neither white sugar (which may pick up residues from gas burners as it is passed over charred bone in the whitening process) nor any other sugar, including additive-free honey, is tolerated. Within 20 minutes of swallowing a teaspoonful of glass-packed, additive-free honey in spring water her ears rang and she developed nasal discharge and general malaise. This cleared after about 2 hours. She has learned that she is substantially more comfortable when she avoids all ordinary market foods and chooses those known not to contain insecticide residues.

That solvents, apart from those that are ingested, are important was disclosed when she tried the application of some nail polish to her fingernails. She developed severe fatigue within 30 to 60 minutes of this application, following which she slept for 2 hours. She stays on her monotonous diet most of the time and finds that when she breaks over into more ordinary foods she tolerates small quantities far better than she has in the past. She returns of her own volition, however, to the restricted régime because her sense of well-being and of being alive is so much greater while following this pattern of living. She feels unable to function when off her diet. She no longer needs salicylates for her arthritis, which is fortunate, since they, in common with other coal-tar products, including "pure food dyes," produce symptoms.

Experimental Study, Case 2

A double-blind test was set up. The unknown specimens consisted of spring water kept in a Freezette plastic container with a soft Freezette food bag immersed in the water. Controls consisted of spring water kept in glass. Specimens of 5 or 6 ounces were delivered to her daily. The coding and identification of the specimens were known to the controlling physician but not to the testing physician. Either additive-free apple juice or beef broth was added to the coded specimens to disguise taste. Pulse variations were checked but did not serve to help identify test preparations. Test specimens at first were ingested on an empty stomach in the morning; later more than 1 was done in 1 day. Eleven unknowns were presented. Her reaction to 1 active specimen is typical. Fifteen minutes after ingestion she noticed a mild sore throat and nasal congestion. In the next few minutes the nasal passages closed and she needed to clear postnasal drip frequently. She became slightly dizzy. In an hour she felt unsteady and dull. Within 2 hours the reaction cleared.

Only 2 errors occurred in the patient's calls. She missed 1 positive specimen which was ingested the morning after eating a food to which she is intolerant; she was dizzy at the time the test was made and unable to distinguish any change in her condition from the test specimen. Her only other error was in calling a blank a troublemaker. Hindsight is of considerably more value than foresight; when confronted with the news that the specimen was really a blank she recalled that she was cleaning windows with a commercial glass cleaner after taking the test specimen. She had not realized that this particular cleaner could cause trouble. One specimen was discarded from the statistics although she correctly identified it as an active specimen. She reported typical symptoms but stated that this, unlike the previous tests, tasted "like plastic." For this specimen the water used had been in the plastic container for approximately 17 days. Three other specimens prepared at the same time were submitted to 6 nonaffected persons, and correct identification of the only one incubated in plastic was made by taste by 3 of them. Omitting this inadequately disguised but correctly identified specimen, the patient correctly identified 4 of 5 active specimens and 4 of 5 control specimens.

Case 3. L. S., a 38-year-old housewife, was seen initially because her physician brother was concerned over the bizarre pattern of her acute and chronic symptoms. She had had ragweed hay fever and perennial allergic rhinitis for years. Indigestion, anorexia and weight loss had been present for 10 years with no organic lesion to explain them. She was treated with tranquilizers. Three hours after switching to Trilafon® she developed acute illness with palpitation and nervousness "as if I were racing." Hives had existed for a week prior to taking the new drug and did not appear to be more than casually related to this reaction. Her history of other drug reactions included severe vomiting following the use of codeine and morphine, angio-edema after horse serum, palpitation after Empirin® tablets, nausea following use of synthetic thyroid, and very severe nausea after Enovid®. Fatigue had been a prominent symptom for a year. Menses were regular.

The patient was found to be hypersensitive to inhalants, including pollens. Hives cleared only when all fruits were eliminated. Fatigue, intestinal symptoms and palpitation were also related to food intolerance. Many food offenders were discovered, including wheat and corn.

A glucose tolerance test elicited severe fatigue and dizziness to the point where she could not stand up. The resulting blood sugar curve was normal. A trial of beet sugar was made in March. Palpitation occurred after this, but a coincidental upper respiratory infection was thought to have influenced the test. A second trial of beet sugar 10 days later was followed within 24 hours by dizziness, characterized by the feeling that the room was still but that she was falling. Three weeks later beets themselves were taken; she developed intestinal gas and a jittery feeling. The reaction to beets was not as acute as that following beet sugar. Palpitation and dizziness followed ingestion of cane sugar on repeated trials. Maple sugar produced hives and dizziness. Honey produced nasal drip but no dizziness. Sugarin, the artificial sweetener, was tolerated with no trouble. Citric acid made her weak, irritable, chilly and sleepy, although citrus fruits were at this time well tolerated.

An attempt to add vitamins to the restricted diet led to the discovery on each of 3 trials that the addition of Poly-Vi-Sol produced rapid pulse, palpitation and fatigue, just as did sugar. Unicaps produced gastrointestinal distress, with irregular bowels and a bad taste in the mouth. Vitamin C tablets were not tolerated, although vitamin C crystals could be taken without trouble. It was learned that she could tolerate Chlor-Trimeton® in its injectable liquid form by mouth, whereas Chlor-Trimeton tablets were not tolerated. Cornstarch (a common tableting ingredient) was pinpointed as particularly deleterious to her. In June 1961 ragweed injections were stopped because even from minute doses she developed stuffy nose, sneezing, and dizziness.

In April of 1962 she was put on the chemical testing régime. Improvement was marked within 4 weeks. A special extract of ragweed was made for her without phenol preservative. This permitted the administration of small doses of ragweed without producing lightheadedness, although she still is extremely sensitive to ragweed protein and does not tolerate usual doses. Additive-free molasses, sorghum, and honey are accepted with no dizziness or other reaction. While wheat, if free of all additives, may be taken with impunity, it was originally true and is still true that ordinary forms of wheat produce symptoms When she eats even additive-free corn, however, she reacts with stomach ache, "gas" and fatigue. Most fruits, even when unsprayed, cause stomach aches; unsprayed celery makes her mouth itch. She still treats milk with caution, but takes limited amounts of ice cream. White sugar is tolerated in small amounts so long as other chemical factors are controlled. She visited a friend and sat in her kitchen when the gas stove was turned on and the burners were in use. She became dizzy in about 30 minutes. This state disappeared after 30 to 60 minutes when she went out into the open air. This pattern of response to lighted gas stove burners has been checked on 4 occasions. The odors of turpentine and fresh paint make her very sick within a few minutes, and to shellac she reacts even more strongly.

Experimental Study, Case 3

A double-blind test was set up for L. S. as for case 1, except that cooked carrots were used. The cooked carrots, incubated in a plastic Freezette container overnight, were coded by the control physician and placed in glass-lidded Mason jars. The patient was told to test them in any order and that 1 or 2 jars would have had contact with a plastic container. She took the contents of 1 jar (about $1\frac{1}{2}$ cooked carrots with 3 tablespoonfuls of liquid) each morning. She felt dizzy after 2 specimens. The pulse rate was taken prior to and at 40 minutes after ingestion. The only significant pulse changes (72 to 87) followed the test of 1 specimen. On breaking the code it was learned that there was only 1 offender, that followed by the pulse increase.

Another series was prepared, this time using spring water kept for at least 3 days in a Freezette plastic container as the active preparation. Molasses was used to disguise any taste. These specimens were picked up from the control physician and delivered by the test physician to the patient for ingestion within 24 hours. The first test was discarded by the test physician prior to breaking the code because the patient had awakened dizzy after visiting the home of a friend where a gas stove was in use. After 2 additional specimens were given the code was broken. She had had no reaction and had received 2 active, fresh specimens. It was concluded that the substance exciting her plastic intolerance was not well contained in water. (This was similar to the mild reactions we were then observing in case 1.)

Still another series was arranged in which peanut oil stored for 2 days in a plastic container was to serve as the test substance. A set of 6 specimens was given to her all at once. She was to take a tablespoonful of each specimen mixed with food in the morning. She experienced a sharp reaction after her first specimen, taken 2 days after preparation. The remainder of the specimens elicited no symptoms. Breaking the code revealed 3 active specimens, of which 1 was ingested 6 days following preparation, and 1 was taken 11 days after preparation. They had been stored at room temperature.

An additional series of oils was presented to be kept in the refrigerator and taken on successive days. The labeled peanut oil used as the active test for this series had been in the plastic container for 10 days at room temperature. The patient called the first 2 specimens positive and the last 1 negative. The evening of the third day she developed fever and muscular aching typical of an influenzal virus infection then prevalent in the community. Further testing ceased. Examination of the code disclosed that her first call was a false positive; it was a control. The second specimen was correctly identified as active, and the third was an actual active specimen not identified.

At this point the record was anything but clear. However, if we eliminate the apparently inactive water tests and all active oil or carrot specimens aged more than 2 days following their removal from plastic contact (on the presumption that the active principle has dissipated), it becomes apparent that this patient had correctly identified all 3 fresh active specimens and had correctly identified 6 of 8 blanks. A summary of all 3 subjects' responses to controls and to freshly prepared active specimens is presented in table 1.

TABLE 1: Identification of Test Specimens

	Patient		
	J.T.S.	J.L.	L.S.
Active			
Correctly identified	2	4	3
Missed	1	1	0
Controls			
Correctly identified	6	4	6
Erroneously called positive	1	1	2
Confidence level (Pearson Contingency Table test)	1:5	1:10	6:100

Discussion

Thus far chemical studies of polyethylene plastic have failed to predict a potentiality of causing systemic biologic reactions. This plastic is formed by polymerization of ethylene gas (C_2H_4) into a basic resin consisting of long chains with side branches. The particular plastic we used (Alathon 14®, formulated dy duPont) was made with an alkyl peroxide catalyst. Molecular weights follow a bell-shaped distribution curve with a large part of the material having molecular weights of from 35,000 to 100,000. However, molecular weights as low as 200 may be found. Fat solvents such as hexane dissolve from 2.8 to 4.67 per cent of the material. About half of the hexane-soluble fraction has a molecular weight in excess of 700.[2] Plastic solubility in oil is about $\frac{1}{5}$ that in hexane. Pellets of solid polymer are pressed between steam-heated rollers and are thus molded into food containers. Chemically the plastic is believed to be virtually inert. There is no measurable vapor pressure. Toxicity has been considered to be zero. There is no known M.L.D. for animals.[3] The Commissioner of Food and Drugs has ruled on the basis of reports from 2 research firms "and other relevant material" that plastic formed to the prescribed set of standards may be safely used in food packaging.[4]

Our patients who are affected by plastics seem to be a very special group with multiple hypersensitivities and multiple intolerances. The reaction patterns of our patients to foods, drugs and simple chemicals are in part typical of atopy and in part are unusual. The initial, and largest part of our work with these subjects has been conducted by nonblind clinical trials. We have been concerned by patients' reports of such atypical reactions as fatigue, stupor, dizziness, emotional depression, palpitation and flare-up of arthritic symptoms. These reactions have been repeatable at will and are elicited by specific offenders. Furthermore, by validating the unusual responses of these subjects to plastic under carefully controlled conditions we reinforce the credibility of their reports of unusual reactions to the other offenders. Thus far all of the "chemical reactors" we have seen have been atopic with true specific protein or drug allergy. As allergists we would expect our experience to be so weighted. The variety of simple chemical offenders in these patients is such as to make us question whether their reactions to chemicals are mediated by a specific antigen-antibody complex. A basic metabolic disturbance is suggested also by the peculiar responses of many of our patients to sugars regardless of source or purity. Almost all of our patients are women and tend to be worse premenstrually and at the time of the menopause. We have considered Coca's concept of "idioblapsis" but have failed to demonstrate consistent pulse changes as described by him.[5]

Testing for chemical factors is not a simple matter. The very multiplicity of the offenders makes controlled conditions very difficult to obtain when working with patients living at home. Delayed reactions even to volatile solvents may appear 20 to 24 hours after exposure. Another special difficulty in testing these patients is that following repeated exposures to various chemicals these subjects gradually build up a state of "tolerance." In such a relatively adapted state patients are chronically ill but do not show sharp acute episodes.

An example of this adaptive phenomenon was provided by L. M., another "chemical reactor" whose history has not been given in this article. We tested her with single-blind technique on successive days using oil incubated in plastic or controls. Her first test specimen was active; she had abdominal pain in less than 3 hours followed by diarrhea. The next day she chanced to take a second active specimen. This time there was only slight abdominal pain about 3 hours later. After a week of continued tests a fresh specimen of oil incubated in plastic elicited only slight abdominal pain 12 hours after ingestion.

Another aspect of testing is the difficulty of providing the test substance in a sufficiently large quantity to elicit a response. In everyday living one encounters meal after meal containing foods which have been packaged in plastic. A short trip through any variety store will disclose the popularity of plastic food containers, drinking glasses, water dispensers, breadboxes, etc. Moreover, it is modern packaging to put meats, fowl, vegetables, cereals, and often fruits in plastic bag containers. Can we really expect to provide an adequate test challenge with a single carrot kept overnight in a plastic bag? Or 1 tablespoonful of oil from a plastic container? Indeed, it is a challenging finding that in certain individuals we can do just this.

Avoidance of plastics is difficult but can be contrived usually to a clinically successful degree. We live in a well plasticized civilization. Our plastic intolerant subjects must test themselves for their individual degree of tolerance to such fibers as nylon, orlon, dacron, or plasticized finishers as on drip-dry cotton or "wet-strength" papers. Only with considerable effort and ingenuity can they find clothing, foods, and furniture which are suitable. Refrigerators and automobiles, because of their plasticized interiors, pose special, more difficult problems. In common with Randolph[6] we have observed that soft plastics seem to cause trouble whereas hard-surfaced ones such as bakelite and formica have not bothered our patients. Hot plastics (as from the interior of a car that has been parked in the sun) are particularly noxious. Our patient L. M. reports that she can eat meat merely wrapped in plastic but not if it is heat-sealed. This same patient eats food which is quick-frozen in separate pieces (as peas which pour freely from the package) but does not tolerate solid blocks of frozen food which have adhered to the plastic inner wrapping. Tolerances vary, and another individual might not be able to take any frozen foods with plastic wraps. One patient (L. S.) observed that she could wear nylon stockings for short periods without reactions, but when she examined several stockings in succession for runs, holding them near her face, she was made dizzy. This emphasizes, of course, the continued release of a volatile substance from soft plastic materials.

Statistical Summary

It is important in situations of this type to give some thought to the possibility that the results obtained might have arisen by chance. Consider, for example, our first patient, J. T. S., who correctly identified 2 of the 3 active doses and 6 of the 7 blanks. Suppose this patient had been guessing, e.g., tossing a fair coin to decide whether to call a dose blank or active. In this case the probability of getting 8 or more right answers out of 10 would be 56/1,024 or slightly more than 5 in 100. This is the test often applied in the literature. However, the patient might have decided, for reasons of her own, to pick a particular 3 of the 10 to call positive, and call the remaining 7 blank. Since the doses were presented in random order, the probability of hitting on 2 or 3 of the active doses and calling them positive would then be 22/120 or about 18 in 100. This latter test (essentially Pearson's 2 x 2 Contingency Table test[7]) is therefore seen to be more conservative, in that it makes no assumption about random behavior of the patient, depending only on the randomization deliberately introduced into the design of the experiment. Using the Pearson test, we find that there is about 1 chance in 10 that our second patient, J. L., who identified correctly 4 of 5 active doses and 4 of 5 blanks could have done so by chance. And in the case of our third patient, L. S., who identified all 3 of the active doses and 6 of the 8 blanks, the corresponding chances are about 6 in 100.

Statistical Conclusion

It is pertinent to note that similar studies in 4 additional persons failed to disclose significant results. A 1-in-5 probability, as found for case 1, is not impressive of itself. A 1-in-10 probability of error, as for case 2, and a 6-in-100 probability of error, as in case 3, constitute good evidence that the results obtained are not due to chance. The topic should be explored further to determine how frequently this problem exists.

Summary

Three patients with intolerance to multiple chemical factors in the environment have been described.

Double-blind testing established beyond reasonable doubt that certain persons react systemically and adversely to some factor which passes into food or water from ordinary polyethylene plastic food containers.

Acknowledgment: The authors are indebted to Dr. Joseph F. Daly, Chief Mathematical Statistician of the U. S. Bureau of the Census, for assistance with statistical planning and evaluation, and especially for pointing out the features of the Pearson test.

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Patient Referrals Needed at Saint Elizabeths for Treatment and Research

Some months ago a letter was circulated to physicians in the Washington area in which Dr. Winfred Overholser, for the Saint Elizabeths Hospital, and Dr. Robert A. Cohen, for the National Institute of Mental Health, announced a collaborative clinical research program at Saint Elizabeths Hospital. The William A. White Building has been converted into an autonomously organized service with comprehensive therapeutic facilities. The inpatient service comprises 6 admission wards. The outpatient service combines the Clinic with the Day Hospital.

The therapeutic facilities provide:

1. Somatic treatment (ECT, insulin coma, and drug treatment)
2. Psychotherapy (individual and group treatment)
3. Psychosocial treatment (individual and group treatment for patients and families; social reorientation and rehabilitation).

Investigative interest is focused on evaluating rationale for and effectiveness of current methods of psychiatric treatment. We are particularly interested in referral of patients with acute affective, schizophrenic, psychoneurotic and other personality disorders, excluding alcoholic and geriatric patients.

Whenever possible we prefer to admit patients on a voluntary basis. At present only legal residents of the District of Columbia can be admitted as voluntary patients; they must have resided in the District for 1 year preceding admission and make arrangements for the cost of their treatment with the D.C. Health Department on an ability-to-pay basis. A representative of the D.C. Health Department has an office at the Saint Elizabeths Hospital.

To inquire about admissions please call Dr. Julia Mayo, Chief of Social Service, Johnson 2-4000, extension 278.

To refer patients and arrange for their admission, please call Dr. Felix von Mendelssohn, Assistant Clinical Director, Johnson 2-4000, extension 220.

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Mammography

Experience with 366 Cases at Columbia Hospital for Women

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"MAMMOGRAPHY" as used in recent literature refers to radiography of the breast with a special soft tissue technique without the use of any injected opaque material.

Current reports, particularly in the lay press, intimate that this is a new technique; this is by no means true. Salomon,[1] a German surgeon, took the first films of breasts in 1913. He radiographed surgically removed breasts as a study of the mode of spread and extent of mammary cancer. Although he did not appreciate the possible use of the technique for early diagnosis in preoperative patients, he did recognize that the roentgenograms could give a true picture of the margin and extent of a tumor.

In Europe during the 1920's a number of investigators[2, 3] used X-rays to evaluate lesions in the intact breast. Many of their observations form the basis of our present-day diagnostic criteria.

In this country Warren,[4] Seabold,[5] Reimann,[6] and Lockwood[7] published papers in the early 1930's. There seemed to be a great deal of difficulty in obtaining a satisfactory technique. Warren reported 85 to 95 per cent accuracy, but disillusion set in when other workers could not reproduce these figures on nonselected patients.

Attempts to explore the breast radiographically after the injection of opaque material into the lactiferous ducts and into cysts were made and found to be painful and dangerous.[8, 9] Gradually, most of those concerned with breast disease in this country gave up on breast X-ray diagnosis.

However, Leborgne[10] in Uruguay kept working and found that if he used very low kilovoltage, nonscreen film, and careful collimation he obtained excellent contrast enabling him to define the margins of a tumor with great precision and without injecting an opaque medium. He also was able to make the original observation that at least 30 per cent of all mammary carcinomas contain peculiar sand-like calcifications which are not found in any known benign tumor.

Gershon-Cohen and his group[11-14] in Philadelphia using similar principles of technique have reported numerous observations in all types of breast disease dating from 1938 to the present. This group, by filming large numbers of asymptomatic women, has made a tremendous contribution to our knowledge of the possibility of using mammography as a screening procedure to detect occult and early carcinoma.

In 1960 Egan[15] reported experience in 1,000 breast X-ray examinations at the M. D. Anderson Hospital. He used very low kilovoltage, good collimation, and, in addition, a special industrial X-ray film with a very high resolving power. In his series he had 245 proven malignant tumors. He accurately diagnosed 238 of them. Nineteen of these were clinically negative. Now everyone began to take a long second look at mammography.

We started our program in August, 1961, adopting the Egan technique with slight modification due to differences in our equipment. In a 12-month period we examined 366 patients. We think our patients are more representative of an "average" population than are Egan's. This means our patients were younger and were less likely to have an obvious neoplasm than those referred to a cancer institution. Early in the program we were commonly asked this question: Why make roentgenograms of a breast with a lump in it when the lump must come out anyhow? To begin with, we find that in many cases it is difficult for even an experienced clinician to be sure whether he is palpating a breast tumor or simply a normal breast lobule. Quite large lesions can be misinterpreted and even missed.

We usually do not recommend mammography

for the asymptomatic patient, but in certain cases of cancerophobia, a strong family history of cancer, or previous radical mastectomy on the other side the films can reinforce the clinical opinion, and occasionally an occult carcinoma will be found. We have 2 proven cases of clinically occult carcinoma in our series.

Some patients have symptoms such as bloody nipple discharge, pain, or a sense of heaviness in the breast. The films may show a lesion and lead to early biopsy in the proper area.

A rather large group in whom mammography has been helpful are those patients with fibrocystic disease. Many have had multiple biopsies and aspirations. Films may help the surgeon in his decision whether or not to perform another open biopsy or whether to treat more conservatively.

In patients who have a dominant mass and are coming to biopsy the films may give the surgeon a lead as to what he may find. Comparative films of the opposite breast are taken for better evaluation. The operator can be more sure that he is getting his biopsy tissue in the proper area. He may use a more suitably cosmetic incision if he thinks the lesion is benign. In some patients in whom obvious carcinoma is present the time taken for filming gives the surgeon a little breather plus a little support in managing the patient.

There are so many good indications for doing mammography that our only regret is that it is not 100 per cent accurate. Egan missed 7 out of 245 carcinomas, and he called 20 benign lesions malignant in 180 cases in his first series. Our results, which are tabulated in table 1, are not quite as good as his. We missed 4 out of 29 proven cancers. We overdiagnosed 7 of 88 proven benign lesions.

Despite certain intrinsic technical difficulties, we intend to continue mammography and to increase our proficiency. At present, mammography undoubtedly has a higher percentage of accuracy than either a gastrointestinal or colon X-ray examination. We concede that the breast lends itself to physical examination more readily than the stomach or colon, but it also is evident that the physical examination of the breast is not a simple procedure. Once the decision has been made that a dominant mass is present, it is even more difficult to predict its nature. The medical school dictum that a biopsy must be done immediately on every breast mass also seems to have some conspicuous exceptions in day-to-day practice. Thus, despite the fact that the breast is an easily accessible organ, and while we are aware that mammography is not 100 per cent accurate, we believe that there is a need for it in the management of patients with breast disease.

TABLE 1: Results of 366 Mammograms—August, 1961 to August, 1962

	Columbia Hospital for Women			
	Total	Coded Benign	Coded Negative	Coded Malignant
1. Proven malignant	29*	2	2	25
2. Proven benign	76	66	3	7
3. Benign—no proof	139	139	—	—
4. Biopsy—no lesion	12	—	12	—
5. X-ray malignant—no biopsy	2	—	—	2
6. No lesion—no biopsy	108	—	108	—
TOTAL	366			

	Columbia Hospital for Women		M. D. Anderson Hospital 1956-1962	
Biopsy Proven Cases	117		1210	
Overall agreement of X-ray report and biopsy report (nos. 1, 2, 4 above)	$\frac{106}{117}$	91%	$\frac{1144}{1210}$	95%
Cancer sensitivity† (no. 1 above)	$\frac{25}{29}$	86%	$\frac{707}{728}$	97%
Cancer specificity‡ (nos. 2, 4 above)	$\frac{81}{88}$	92%	$\frac{437}{482}$	91%

* Of the 29 proven malignant lesions 2 were thought to be negative on physical examination.

† Percentage of cases histopathologically diagnosed malignant that are coded as malignant by mammogram interpretation.

‡ Percentage of cases histopathologically diagnosed nonmalignant that are coded as malignant by mammogram interpretation.

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A Reappraisal of the Colonic Polyp[*]

A Ten-Year Survey

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This study represents part of our experience in the treatment of patients with adenomatous polyps of the colon or rectum seen at The Proctology Clinic of Washington in the 10 years between January 1, 1951 and December 31, 1960. During this time we saw 1,937 patients (47 of which were children) with growths in the colon or rectum diagnosed as adenomatous (or papillary) polyps. This group forms approximately 19 per cent of the total number of patients seen at the Clinic during these years. Cases of familial polyposis are not included in this study.

Of the 1,937 patients the majority (1,373 cases) had polyps diagnosed and treated in the office by simple local procedures carried out through the proctosigmoidoscope. These procedures were (a) simple electrodesiccation of a small sessile polyp, (b) total removal of a small polyp by the biopsy forceps, and electrodesiccation of the base, and (c) excision of a pedunculated polyp with the diathermy snare.

Another group of patients (396 cases) were treated in a similar manner but in a hospital. Some were hospitalized with the sole purpose of removing a low-lying polypoid lesion under anesthesia; the majority also required surgery for the correction of other anorectal disease. On this group procedures such as the resection of a sessile papillary rectal lesion, with the electric scalpel without proctotomy and the transanal extrusion of pedunculated adenomata with ligature of the base, were carried out in a small number of patients.

The purpose of this presentation is to analyze and discuss the remaining 169 cases. This group of patients were treated by major surgical procedures through an abdominal, perineal, or combined approach.

The majority (60 per cent) of these patients were over 50 years of age, and only eight (5 per cent) were found among children (2 to 8 years of age). The ratio between sexes was close to 1:1 (88 females, 81 males).

Diagnosis of the lesions was made primarily by endoscopic and/or roentgenologic means. All the rectal and most of the lower sigmoid lesions were discovered at proctosigmoidoscopy. Lesions above 25 cm. from the anal outlet were found by means of a barium enema with air contrast. It must be emphasized here that the barium enema without the aid of air contrast is practically worthless in discovering small tumors of the colon. Statistics not including air contrast methods are not valid, in our opinion, in evaluating barium enema by contrast with other procedures such as coloscopy.

Preoperative preparation consisted of: Sulfathalidine®, 6 Gm. per day for 4 to 6 days; clear liquids only for 24 to 48 hours prior to surgery; catharsis, consisting of a daily saline laxative for 2 or 3 days and castor oil the afternoon of the day before operation; and a colonic irrigation with 1 gallon of water in divided doses administered the night before surgery.

The location of the lesion had all to do with the type of surgical procedure carried out. This varied between the simple transcolonic excision of a pedunculated polyp to the radical proctosigmoidectomy for the giant papillary tumors of the lower rectum (table 1).

TABLE 1: Procedures in 169 Cases of Polyps of the Large Bowel

Transcolonic	129
Segmental resection	16
Left colectomy	7
Total colectomy	6
Anterior resection	4
Posterior proctotomy	4
Pull-through	2
Right colectomy	1

Of the 169 patients 129 underwent transcolonic excision of adenomatous polyps. Twelve of these had multiple colotomies for the removal of multiple lesions diagnosed by barium enema with air contrast. Sixteen patients had a segmental resection of a short length of colon (13 of the sigmoid, 1 of the transverse colon, and 2 of the right colon) for what was grossly or microscopically (frozen sections) considered to be a cancer arising in a polyp. Seven were treated by left colectomy, 6 by total colectomy, 4 by anterior resection, 4 by proctotomy, 2 by abdominoperineal proctosigmoidectomy with preservation of the sphincter, and 1 by right colectomy.

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[*] Presented at the Sectional Meeting of the American College of Surgeons, held in Washington, D. C., April 16-18, 1962.

At the time of surgery the performance of coloscopy was seriously considered after the year 1952. This type of endoscopy was first performed by us in 1951, but it was not until the early days of 1953 that it began to form an integral part of our treatment of patients with polyps of the rectum or colon necessitating abdominal surgery. Coloscopy is most satisfactory when the entire colon can be visualized. Unfortunately, because of technical difficulty or because of what was considered an added risk to the patient at the time, complete or total coloscopy was performed in only 37 of the 169 cases (table 2).

TABLE 2: Coloscopy in 169 Polyp Cases

Total (cecum to rectum)	37
Subtotal (hepatic flexure to rectum)	24
Partial	52
None	56 (⅓)
Positive coloscopy	38 (33.5%)

Subtotal coloscopy, visualizing the colon from the hepatic flexure to the rectosigmoid, was carried out in 24 patients. Fifty-two patients were explored by a partial coloscopy through a single colotomy incision, with insertion of the scope the full 25 cm. proximal and distal to the opening.

Total coloscopy can most satisfactorily be carried out by using 2 incisions, 1 in the upper sigmoid and the other in an area of the transverse colon, close to the hepatic flexure. Freeing up of the attachments of the hepatic flexure and the sigmoid may be required for adequate visualization of the cecum and the descending colon. As a rule, the colon was found to contain thin, liquid feces which could easily be aspirated.

By coloscopy we have been able to discover polyps additional to the ones already diagnosed preoperatively in 38 cases (33.5 per cent of those having coloscopy performed). This compares with figures reported in the literature.

The locations of the lesions found are shown in table 3.

The sigmoid colon was far and above the most common location for the polyps found in this group of patients. The descending and transverse colon showed about an equal number of lesions, except when a single lesion was present, when the predilection was for the descending colon. The right colon proximal to the hepatic flexure contained the least number of polyps. The distribution of the polyps found at coloscopy (table 4) paralleled the general location found by other diagnostic methods.

TABLE 3: Location

	Total Number of Lesions —314	Patients with Single Polyp—92	Patients with Multiple Polyps—77
Rectum	8	7	1
Rectosigmoid	9	6	3
Sigmoid	214 (68%)	59 (64%)	155 (69.5%)
Descending colon	30	12	18
Splenic flexure	6	0	6
Transverse colon	28	5	23
Hepatic flexure	5	0	5
Ascending colon	8	2	6
Cecum	6	1	5

TABLE 4: Location of Lesions Found by Coloscopy Not Diagnosed Prior to Surgery*

Sigmoid	22
Descending colon	10
Transverse colon	12
Ascending colon	4
Cecum	5
	— 53

* Largest 0.6 cm. in diameter.

The removal of polyps found at coloscopy varied between simple desiccation with the electrode of the small sessile lesions and snare excision of the larger pedunculated polyps.

The microscopic nature of the lesions studied was described by different pathologists in several different hospitals.

The type of cellular architecture found was responsible for the separation of these polyps into 3 groups. The juvenile type found in childhood was composed mostly of connective tissue covered by a thin layer of mucous membrane (figure 1); the adenoma type with its solid glandular composition (figure 2); and the papillary adenoma of softer, feathery appearance (figure 3). In several instances the report of a biopsy taken prior to the removal of the entire polyp and the final report of the lesion showed some discrepancy as to whether the polyp was a so-called adenoma or of the papillary type. This was more apt to happen if reports were received from 2 different sources of information.

According to this classification, the cases can be separated as follows: juvenile, 8; adenomatous polyp, 96; and papillary adenoma, 65.

Tables 5 and 6 show the distribution of the patients with benign and malignant lesions, as well as the type of malignancy encountered in the polyps.

TABLE 5: Distribution of Patients with Benign and Malignant Lesions

	No. Patients	
Benign lesions:		
Juvenile type	8	
Adenomatous	78	135
Papillary	49	
Malignant lesions	34	(20%)

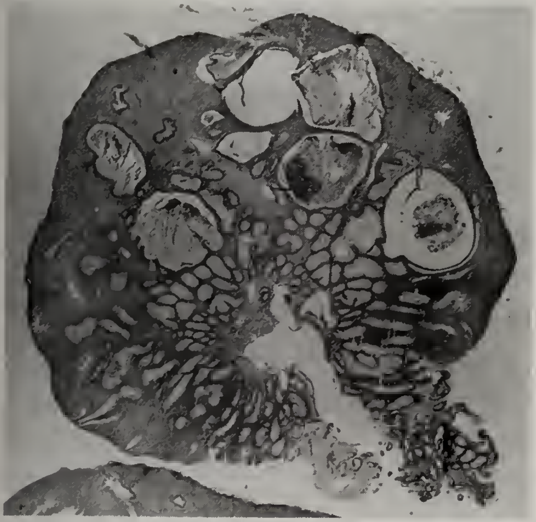

Fig. 1. Juvenile polyp.

The majority of the patients (92 or 55 per cent) had single colonic lesions. Seventy-seven or 45 per cent had more than 1 polyp in the colon. Coloscopy uncovered polyps not found by clinical methods in 38 patients (50 per cent of those patients with multiple polyps); this would indicate that if a patient is known to have multiple polyps by barium enema examination and sigmoidoscopy the chances are that in 1 out of 2 such patients other polyps will be discovered by coloscopy.

The follow-up of these patients continues and has been as complete as possible. Usually a patient returns at yearly intervals for sigmoidoscopy. Every other year a barium enema is recommended. Some patients were followed at closer intervals because multiple lesions were found or because malignant degeneration was present. Fifteen patients have been followed more than 10 years; 51, 5 to 10 years; and 103, 1 to 5 years.

TABLE 6: Types of Malignant Growth

	Adenoma	Papillary
Atypism	4	2
Superficial	8	7
Infiltrating	6	7

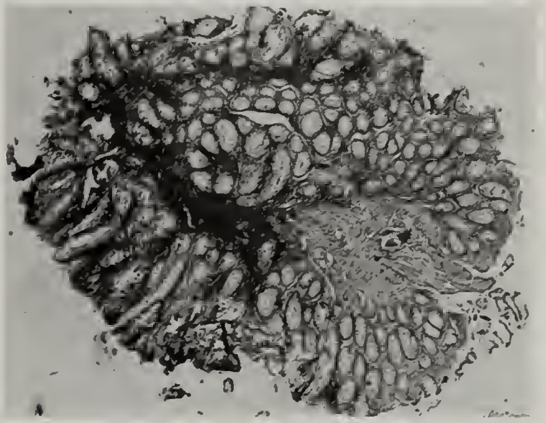

Fig. 2. Adult adenoma.

There were 9 deaths in this group of 169 patients followed. Three died as the result of progression of the original cancer found in the polypoid lesion. Two died as the result of cancer originating in other organs (stomach and pancreas). One death was the result of a pelvic abscess and generalized peritonitis 8 days following a pull-through proctosigmoidectomy.

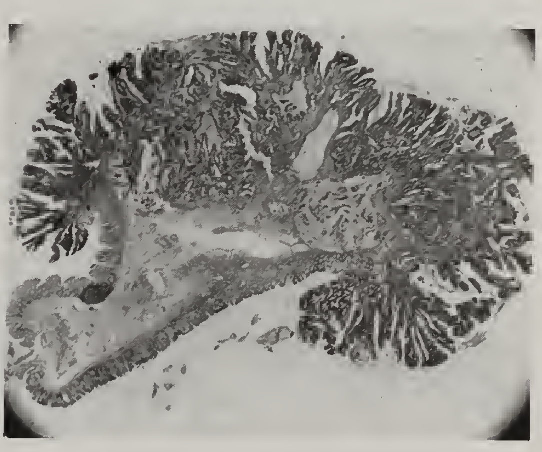

Fig. 3. Villous or papillary polyp.

Of the 3 patients that died of cancer of the colon or rectum, 2 had giant papillary tumors of the rectum showing invasive carcinoma through the bowel wall into the surrounding structures. The other patient had had a resection of a cancer of the sigmoid elsewhere. A year before his death a polyp was discovered in the colon, and at surgery a few small metastases to the liver were found. The polyp was benign.

During the follow-up study, 33 or 19 per cent of the whole group developed other polyps requiring additional treatment. Table 7 shows the procedures performed for these new polyps.

TABLE 7: Procedures in Patients with New Polyps

New polyps in 33 patients (19% of 169 patients followed)

Local removal	26
Transcolonic	2
Total colectomy	2
Right colectomy	2
Left colectomy	1

The choice of procedure depended on careful evaluation of the location and multiplicity of the new polyps. If a single lesion was found in a patient previously having had a single polyp, a transcolonic excision was chosen; if 2 or more polyps were seen in a short segment of bowel, particularly if this was the segment involved at the first operation, that section of the bowel was removed; and finally, if the polyps found were dispersed in the colon, total colectomy was performed.

Discussion

The subject of polyps of the colon cannot be intelligently discussed without first knowing what the discussor means by the term "polyp." This word is merely a morphologic descriptive term used to define a tumor mass rising above the surface of the tissue of origin. In order to complete the meaning of the word polyp, it must be qualified by the addition of another word describing the basic histologic make-up of the tumor, such as lipomatous polyp, lymphoid polyp, etc. By common usage, the meaning of the term "polyp of the colon" has come to represent a polypoid tumor of the colon composed of gland-forming tissue or adenoma.

Several types of tumor can be found in the colon which will qualify for incorporation in this group. The smallest is the epithelial hyperplastic plaque which measures an average of 2 mm. in diameter, rises above the surface for about 0.5 mm., is sessile, and is almost always benign (figure 4). The largest polypoid tumor found is the villous papilloma, which may reach 12 cm. or more in diameter, may involve the mucous membrane of an entire section of colon or rectum, is sessile and multicentric in origin, and almost always shows the presence of foci of malignant degeneration. Between these two extremes one finds tumors of various shapes and sizes, pedunculated or sessile, smooth, lobulated, ulcerated, and of various shades of red.

The basic lesion is the hypertrophy and hyperplasia of the mucous gland. The ensuing type of growth pattern depends on the location of the cells of origin, whether at the base of the gland (adenoma) or the surface epithelial cells (villous tumors)[1] and whether or not multiple adjacent centers of growth are involved in the process. The tumor may then remain sessile or take on a pedicle formed presumably by the peristaltic push of the bowel. It stands to reason that if much submucosal tissue reaction or infiltration occurs during the growth of the tumor the attachment to the wall will be sessile, whereas a pedicle is liable to be formed if the underlying tissues remain in a normal soft state (as evidenced in the long, soft pedicles seen with some of the adenomatous polyps) (figure 5).

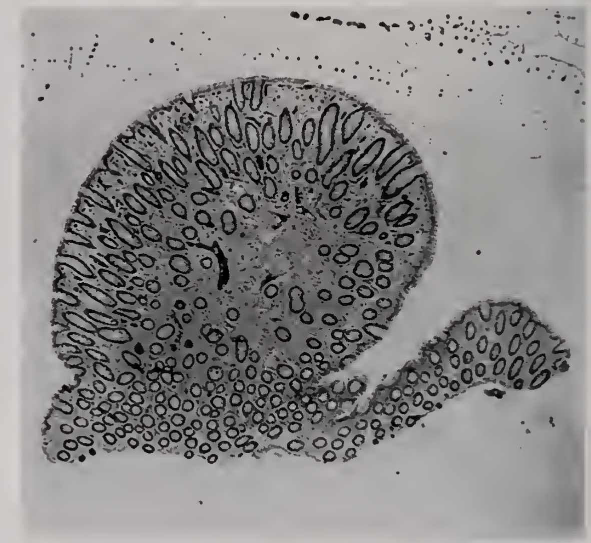

Fig. 4. Epithelial hyperplasia.

The polyps of the colon and rectum seen in children are of a different nature from the polyps seen in adults. These "juvenile polyps" are composed mostly of connective tissue and are sometimes classified as hamartomas (figure 6). They cause worry because of their tendency to bleed but are harmless. They will not change into cancer and if not removed may well be passed spontaneously.

The histologic pattern of gland proliferation varies in the tumors seen in older individuals. It can assume a blunt end, nodular growth (adenoma), or a papillary arrangement. Occasionally both of these processes seem to take part in the formation of some of these polyps. This could explain why a difference of opinion occurs in the reports received when pathologic diagnoses have been given by two or more pathologists. It would seen important to do multiple-slide total pathologic studies of these tumors if we are finally to come to any positive conclusions in the relationship of adenomatous polyps and carcinoma of the colon. Subserial sections are studied in some centers (Ackerman, NIH).[2] By this practice, small invasive areas of cancer may be detected that would have been missed by single slide studies. This practice would also explain why some patients have been reported to die of metastatic disease from "noninvasive" carcinoma found in polyps of the colon and rectum, when in reality they have been invasive.

The incidence of polyps in the colon has been the subject of a recent article by Blatt.[3] This investigator found the presence of polyps in 38.8 per cent of colons examined completely as portmortem specimens. Bargen, many years ago, reported an incidence of 69 per cent in similar material examined with a magnifying lens.

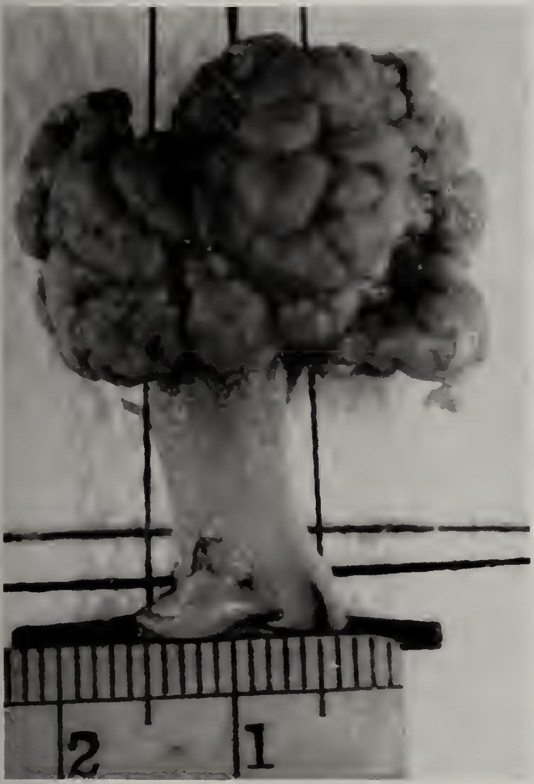

Fig. 5. Pedunculated polyp.

Clinically, many investigations, as well as this one, apparently fall short in the discovery of polyps of the colon. This can be explained by the inability to examine the entire colon in detail in the majority of these patients. The visual acuity of the observer also plays a strong part in seeing the smaller 1 to 2 mm. mucosal tumors; this is particularly the case during coloscopy. Special interest in this problem of polyps will also increase the percentage of polyps discovered. A comparison of a previous reported incidence of 2.4 per cent by our group[4] in 1950 and the present 19 per cent points to the importance of this factor in the discovery of polyps of the large bowel.

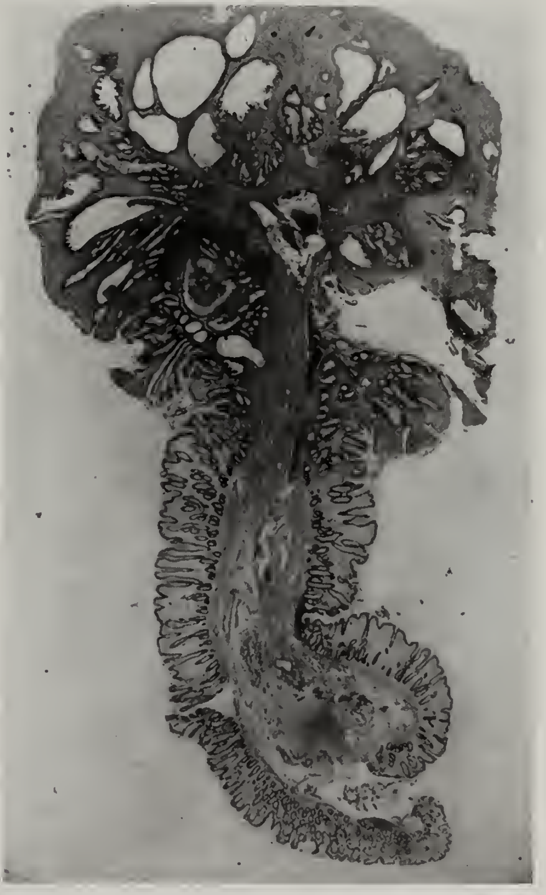

Fig. 6. Juvenile polyp with degeneration and almost severance from pedicle.

The predilection of these tumors for the sigmoid and rectal regions has been the subject of many reports. Recently, and again quoting Blatt, a change in the accepted concept of location was reported by him. The largest percentage of polyps in this report, 25, were located in the transverse colon (including both flexures.) The sigmoid was next with 20 per cent, and the rectum was last with only 7 per cent. The last figure brings to mind the importance of knowing what we mean by the anatomic term "rectum." Our concept of this part of the large bowel includes the last 6 inches of the tract, while Blatt considers the rectum that part of the large bowel distal to the peritoneal reflexion (about 3 inches long). This cuts down the polyp-bearing surface of our interpretation of the rectum by 50 per cent, partly explaining the discrepancy between his figures and ours. Clinically the sigmoid remains the favorite segment for polyp growth.

Ackerman and his associates[5] have in recent years expressed great doubts of the development of cancer from adenomatous polyps. Their studies have been well documented, and it would seem that our older ideas of the inevitable cancer developing in adenomatous polyps are not well founded. This does not include the papillary or villous tumors[6]; on the contrary, we are only too well aware of the malignant potential of these tumors. The adenomatous type, though, would seem to remain benign more often than we have thought.

The superficial mucosal atypical changes occurring in many polyps (figure 7) are apparently of little importance in the development of a frank carcinoma. These cells do not behave as carcinoma and will not metastasize. Ackerman and his associates have been unable to show metastatic cancer occurring in polyps "in which the stalk did not contain neoplastic cells."

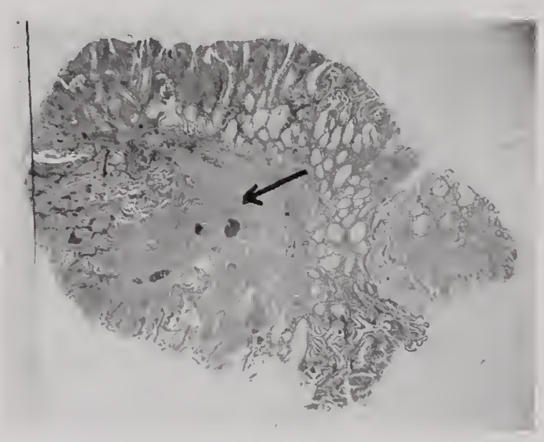

Fig. 7. Polyp with area of "carcinoma" showing some degree of invasion into stroma.

Lymph node metastases have been reported from adenomatous polyps by Klein and Scarborough,[7] but we have been unable to find any such metastases in our cases. It is not unusual to find lymph node metastases in villous papilloma with malignant invasive cancer; this occurred in the 2 fatal cases of villous tumors in this series. None of the patients in this study showing the unusual changes simulating areas of cancer in adenomatous polyps, whether in situ, superficial or invasive, have shown metastases or have died of cancer of the colon.

Recently, Enterline et al[8] reported on 1,700 polyps of the large bowel in which 61 adenomatous polyps were shown to have changes suggesting the presence of cancer, some invasive in nature. None of these patients died of cancer. Sixty per cent of the polyps were removed locally, 36 per cent by segmental resection, and 4 per cent by abdominoperineal resection.

In our group most of the "malignant" adenomas were removed by transcolonic excision. The presence of a long pedicle indicates, to our minds, that local excision will suffice for the adequate removal of any of these tumors. Even if the final report shows the presence of atypical areas we do not entertain the necessity of further surgical treatment. This viewpoint is more prevalent now throughout this country than it used to be.

If the tumor is sessile, the chances of it being a papillary growth, with its more dangerous malignant potential, are increased, and our treatment of choice in these cases is segmental resection or abdominoperineal excision. If the tumor is accessible through the rectum, particularly if of the smaller sizes, it is removed completely through the anus and further surgery done depending on the pathologist's report. If invasive carcinoma is present a more radical procedure is done. If atypism or superficial changes are the only findings, local excision has been found to be adequate for removal. Close follow-up is extremely important in these cases and easily carried out by sigmoidoscopy.

The rationale of removing a sessile lesion by segmental excision of a part of the colon will do away in some cases with the possible mistake of opening the colon in the presence of a small frank cancer simulating a sessile adenomatous or papillary polyp. This, of course, cannot be obviated when coloscopy is performed and the cancer is not suspected.

The treatment of mucosal epithelial hyperplasia is simple electrodesiccation when the lesion is discovered either by sigmoidoscopy or coloscopy. The rationale for the all-out removal of these small tumors is not so simple. Are these lesions dangerous? We have reported the follow-up of some patients with these anomalies.[4] Repeated visualization of these plaques over periods of from 5 to 10 years (12 cases) showed no evidence of enlargement or gross changes; some seemed even to have become smaller or to have disappeared. Other plaques developed in 2 of these 12 cases, as they do in any group of patients. So far there has been no evidence of danger from these areas of hyperplasia or any tendency to form a more mature type of polyp. Further study of this aspect of the problem will be made of the patients with rectal and sigmoid polyps treated by local office procedure.

Silicone foam diagnostic enemas as reported by

Cook and Margulis[9] may show their true worth in the future; so far we have had no experience with this method. In the meantime coloscopy will continue to be carried out by our group as an integral part in the adequate study and treatment of polyps of the colon. The usual operative safeguards and surgical judgment obtain in the use of coloscopy.[10] If prolongation of a surgical procedure is inadvisable, as in a patient with heart disease, coloscopy probably should not be done. We have found no contraindications to coloscopy. There were no patients with complications attributable directly to this procedure that could not have been caused by a simple transcolonic excision of a polyp.

The finding of multiple polyps in a patient brings up the question of a more radical approach for the treatment. In our series, the multiplicity of these tumors seemed to be greater for lesions of the papillary type than for the smooth adenomatous polyp. Also, the incidence of malignant degeneration, according to tumor type, was greater in the papillary variety.

The solution of this problem is simple if the polyp-bearing area is confined to a short segment of bowel. Here a segmental resection of this area would appear to be the treatment of choice. In the case of multiple polyps of the colon, with wide normal segments of colon between them, the problem is subject to many opinions, varying from total colectomy with ileoproctostomy to multiple colotomy incisions for their removal. Strong consideration for total colectomy should, in our minds, be given to multiple polyposis when the polyps are sessile, and particularly if they are of the papillary variety. Multiple colotomies have been the choice, as they were years ago, when adenomatous polyps with long pedicles or small benign lesions are found by coloscopy. Perhaps Ackerman's work will make us more conservative in cases of multiple adenomatous polyps. We have had no reason to regret our choice of multiple colotomy incisions in some of these cases rather than total colectomy, as would have been our selection less than a decade ago. Some of the reasons behind total colectomy as the procedure of choice were the fear that all of these polyps would eventually become cancers and the belief that the colon has a greater propensity to form polyps in all cases of polyps than in the so-called nonpolyp former. Work along this line is being done at the Lahey Clinic by Swinton and his associates[11] as well as at the National Institutes of Health.

The association of polyps and cancer of the colon is well known, and one must be particularly careful in patients with polyps showing carcinomatous changes, since the chances of an associated cancer in the colon seem to be greater.

Follow-up of patients with polyps of the colon is important, since more polyps may form in the colon as time goes on. As in the case of cancer of the colon there seems to be a direct relationship, percentagewise, between the increase in age of the patient and the incidence of polyps of the colon. Our follow-up survey of these 169 patients seems to indicate that a patient with a polyp has the same chance (19 per cent) as a patient without a polyp of developing additional growths.

In conclusion, the treatment of polyps of the colon, in our opinion, remains the same as in the past few years, mainly because of our inability to predict what the pathologic nature of a particular polyp will be.

Summary

This study is part of our experience in the treatment of patients with polyps of the colon or rectum at the Proctology Clinic of Washington, between January, 1951 and December, 1960. During these 10 years a total of 1,937 patients were found to have polyps in the colon and/or rectum.

A special study was made of 169 patients requiring some type of abdominal surgical procedure for the removal of these tumors. The statistical values with regard to the type of polyp (juvenile, mature adenoma, papillary, benign or malignant), the method of removal, and the value of coloscopy, as well as the follow-up and recurrence have been presented.

Together with an evaluation of the work of others, it serves to enhance our confidence in the way we are now handling this problem, at the same time giving the patients a much better prognosis, even though the actual surgical approach in this matter remains the same.

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(Continued on page 38)

Head Injuries: Aspects and Problems*

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INJURIES OF THE HEAD create some of the most difficult and challenging problems in medical practice. The neurologic aspect is the basic factor, but this is intimately involved in a variety of medical, surgical and social problems. It is therefore essential that our approach to this subject be as broadly based as possible.

A head injury, like injury to any part of the body, produces local and general responses. There is a special case for the head because it contains the majority of the master-system of the living organism. Inevitably it follows that these responses to injury and their secondary effects are far-reaching and often unique. Thus, the local reaction to trauma in any tissue is inflammation with its five classic signs, viz., heat, swelling, redness, pain and loss of function. But in head injury the significant basic reactions in nervous tissue are only two, i.e., loss of function, which is the disturbance of consciousness, and swelling, which is cerebral edema. In addition, there are a number of less common responses involving the central nervous system and its coverings. These include epilepsy, cranial nerve complications, endocrine and metabolic disturbances, headache, and a group of local responses of extreme surgical significance. These latter are the varieties of intracranial hemorrhages and hematomas, skull fractures and leakages of cerebrospinal fluid and air, infections, and the traumatic arteriovenous fistulae. Only a minority (less than 10 per cent) of head injuries require surgical procedures, although all patients are potential candidates for surgery when first seen. This is the crucial fact in the management of such patients.

The general response of the body to injury anywhere is recognized as shock when it is of sufficient severity. In this response, the head is not peculiar and the lesser degrees of shock in head injury are related to the factors of lesser extent of injury and of amount of blood loss. These hold true for any tissue.

The responses to head injury and their related aspects may therefore be conveniently considered under the following heads:

1. The neurologic problem—the disruption and evolution of consciousness after trauma.
2. The medical and surgical problem—the remainder of the local and general responses, their diagnosis and management.
3. The social problem—the convalescence, rehabilitation, and return to society of the "brain-hurt" individual.

The Neurologic Problem

It was Hughlings Jackson who in 1874 realized the significance of studying the disruption of consciousness by trauma as a range of conditions varying "from the slightest confusion of thought to deepest coma." In this study there is one term which has been the subject of much confusing description and definition. This is the term "concussion." There really should be no confusion if the following facts are kept in mind. An operational definition of consciousness is that state of awareness characterized by maximum utilization of sensory input and effector output potential with full capacity to store events related to contemporary time and space. Concussion, which literally means "violent shaking," is a general term indicating injury to tissues of the nervous system, the prime index of which is impairment of consciousness. An analogous general term used for the effect of trauma on tissues of the skeletal system is fracture, where the index is discontinuity of structure. It may be noted that in both of these general terms, concussion and fracture, the severity or exact condition is not implicit; and so it should be. The tendency to consider concussion as a specific, transient, reversible interruption of nervous function leaving little or no physical trace is erroneous. The sentence, "This patient has a fracture," is meaningless unless we specify whether it is in the femur or a terminal phalanx, its type and state, and if it is simple or compound. Similarly, it is meaningless to say, "This patient has a concussion" unless we specify the depth and duration of unconsciousness, the neurologic sequelae, and the final performance of the individual. This retrospective diagnosis of head injury is the only reasonably accurate method we have of clarifying the severity of concussion. Of course, this is because we know so much less of the events in concussion compared to what is known of fractures. In this review the terms "contusion" and "laceration" will be used only as terms denoting the specific pathologic conditions they describe which are true both for brain and tissue elsewhere. It is misleading to use them to denote more severe grades of brain trauma than concussion, since they bear no direct relationship to the severity of head injury. Thus it is possible to have brain contusion and laceration without concussion and vice versa.

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Over the past quarter century clinical observation of head injury has revealed a fairly consistent picture. The patient who receives a blow of sufficient severity to the head becomes immediately unconscious. From this stage of almost total suspension of function of nervous tissue, the patient is seen to pass through stages of gradually, though not steadily, decreasing confusion and increasing awareness of his environment to the recovery of consciousness characterized by his restored ability to store ongoing events. When this stage is reached it will be noted that there is amnesia for all events to that point of recovery. This is the post-traumatic amnesia (PTA), the length of which is probably the best yardstick of the severity of the concussion. This conveniently measures the total time during which consciousness was disturbed and most accurately correlates with the severity. The observations made in patients during the amnesia vary individually only in the degree and duration of the symptoms, not in their nature. It is also true that the occurrence of impaired cerebral function after recovery of consciousness is directly related to the length of the disturbance of consciousness, i.e., the post-traumatic amnesia. These include impairment of calculating ability, focal neurologic sequelae, memory defects, confabulatory states, episodic dizziness without vertigo, and headaches.

This relationship of severity of concussion or brain trauma to the disturbance of consciousness or post-traumatic amnesia has been emphasized because it is the basic and most important aspect of such trauma. Although focal brain injury may add its signs and the presence of raised intracranial pressure demand attention, these factors along with contusions, hemorrhages, fractures, and lacerations should be regarded, as C. P. Symonds and G. Jefferson have named them, epiphenomena to the basis of concussion. The question follows: What then is the mechanism of concussion?

The consensus based on a wide range of clinical and pathologic observations and animal experiments has changed from an emphasis of damage to the cerebral cortex to one of damage to the brain stem. There is no doubt that lesions of the hypothalamus and brain stem, both clinical and experimental, can produce a state of "traumatic stupor"; equivalent mass lesions of the cortex do not. The evidence of experimental studies of concussion in animals also suggests that the maximum sheer strains occur near the craniospinal junction, but such studies also show that compression and sheer strains occur throughout the brain and upper spinal cord. Thus, although present evidence strongly supports the role of the brain stem in the initial loss of consciousness, it does not imply that the state of concussion as described above can be so explained. A simple analogy here may be fruitful. If we inadvertently push a television set off its support and in doing so jar it and pull out its connecting plug, the subsequent failure of function cannot be attributed solely to the disconnected plug, as one soon learns on restoring the connection. Damage to the brain stem is thus not the whole story, although it is quite possible to correlate it with the initial loss of consciousness. Thus, in most cases of head injury there is singularly little evidence of any other result of brain stem injury, e.g., ocular palsies and nystagmus. Moreover, the period of disturbed consciousness following the initial unconsciousness with its typical disturbances of memory cannot be reproduced by lesions in the brain stem. Finally, there is the question of retrograde or anterograde amnesia. This is the loss of memory for events preceding the injury. This is quite unique to concussion and cannot be explained in terms of damage to the brain stem.

It is a common truth that one cannot usually see evidence that one does not look for. This is as true of the search for the pathologic lesions of concussion as for anything. It is only recently that the work of S. Strich has revealed that, in addition to the changes seen in the neurones of the grey matter, there are often widespread degenerative changes in the nerve fibers of the white matter. These changes could quite reasonably follow the tearing or stretching of the nerve fibers at the moment of trauma. Thus we can see that the pathologic basis of concussion is probably related to the extent and severity of damage to both nerve cells and their fibers. The relationships of symptoms to these lesions will therefore be found in the aspects of site of damage as well as extent and severity. Thus, bilateral lesions will obviously result in a more severe concussion. Considerable research remains to be done, however, on the exact relationships of site and amount and on severity of damage to symptoms. We also do not know how much of the final damage is due to the initial trauma and how much to the secondary effects of raised intracranial pressure, cerebral edema, shock, and its related dangers of hypoxia and hypotension.

The Medical and Surgical Problem

The mortality of head injury is too high. Of the 80,000 patients with head injury admitted to hospitals annually, between 12 to 20 per cent die. In almost 70 per cent of the fatal cases death occurs in the first 24 hours. Doubtless a considerable portion of these deaths are due to irremediably severe brain damage or a combination of severe damage elsewhere with head injury and shock, but it is facile and wrong to assume that such is usually the case and fail to recognize remediable complications. These may be intracranial, e.g., hematomas and increased intracranial pressure due to edema, or extracranial, such as respiratory difficulty. In the management of head injuries, therefore, the following factors responsible for the mortality must be remembered and properly recognized:

1. The brain trauma per se, i.e., concussion.
2. Intracranial complications, e.g., hemorrhage, edema, and infections.
3. Extracranial complications, e.g., respiratory complications, fat embolism, and metabolic disorders.
4. Trauma elsewhere, its local and general effects.

The most urgent and primary requirement is an accurate diagnosis of the extent of the injury as soon as possible after the accident. In spite of the drama of the situation, the noncoöperation of the patient, and the presence of multiple injuries making examination difficult, it is always possible to record accurately the following minimal data: the level of consciousness in terms of response to stimuli, verbal or tactual as the case may be; the size and reaction of the pupils; the tone and power of the limbs, both voluntary or involuntary in response to pain; the state of the reflexes; and the plantar responses. In addition, the pulse rate, respiratory rate and pattern, blood pressure and temperature should be recorded. A base line is thus constructed on which progress may be judged. Subsequent developments tend to follow one of three possible courses. The patient regains consciousness slowly or rapidly and returns to his pretraumatic state uneventfully. This course is followed in the majority of cases, but as yet we do not know how to predict this development from the initial picture. Second, the initial improvement in the level of consciousness is followed by a deterioration, the so-called "lucid interval" classically seen in cases of extradural hematoma. Cerebral compression by intracranial bleeding is the first to come to mind to the surgeon when he observes deterioration in a rising level of consciousness. Although such complications are eminently remediable by surgery, it must be remembered that they develop in only 6 per cent or so of head injuries and that there are other causes of such deterioration of a more medical nature. These are chest complications, cerebral fat embolism, shock from other injuries, and metabolic and electrolyte disorders. All of these can lower the level of consciousness and accentuate existing neurologic deficits. Proper diagnosis at each stage of change in the patient's condition must precede any therapy. In this way pointless cranial explorations may be avoided.

The third course of progress in head injury is the relatively smallest group of patients who remain unconscious for prolonged periods of time. These have usually suffered the most severe brain trauma, and unconsciousness for longer than 4 weeks usually has a grave prognosis. However, vigilance cannot be relaxed in the care of such patients, because they too are liable to any of the complications mentioned. Their diagnosis here is of course made more difficult by the loss of the index of the level of consciousness. However, careful attention to the vital signs and the prevention of complications and their treatment are often rewarded by functional recovery of patients who have been unconscious for periods as long as 6 months.

There is no space here to describe in detail the diagnosis and management of the unconscious patient and the complications that develop, but the following highlights on certain aspects are of particular importance. These have been chosen because of what we do not know about them and where research is now focused. Thus there is little controversy on how best to evacuate intracranial hematomas or manage compound depressed fractures of the skull. Similarly, tracheotomy in the management of chest complications in cases of head injury is routine practice.

There are 4 aspects which are undecided:

1. Most classifications of head injury are not compatible with the attitudes outlined above. A new attempt at a classification which will allow more accurate clinicopathologic correlation has been introduced into the Branch of Surgical Neurology at the National Institutes of Health. This is based on both experimental work and the clinical observations of W. Ritchie-Russell, C. P. Symonds, and W. Lewin. Patients will be graded into one of 5 categories based on assessment of consciousness in response to a standard set of tests. These will range from 0 to denote unconsciousness with no response to all types of stimuli, including absence of pupillary and tendon reflexes, to 5, which denotes full consciousness when the patient is capable of being interviewed and assessed for the extent of retrograde and post-traumatic amnesia. For convenience, these grades are applied after the first hour following the trauma. This grading will be done at frequent and regular intervals and subsequently correlated with a scale of severity of concussion as assessed by the post-traumatic amnesia. Such a scale has recently been suggested by W. R. Russell and A. Smith:

Slight concussion—PTA under 1 hour
Moderate concussion—PTA 1 to 24 hours
Severe concussion—PTA 1 to 7 days
Very severe concussion—PTA over 7 days.

These retrospective correlations would not only provide more accurate diagnosis but might reveal facts which would enable the prediction of progress in cases with brain trauma. Of course, cross correlations will also be made on other observations, such as the neurologic status, the metabolic and endocrine status, the general medical status, and the results of such investigations as the EEG and special studies to show localized lesions in the brain. In this connection a study of the behavioral responses of the brain-injured person to special tests at each stage of his improvement will also reveal new information on the reintegration of the disrupted central nervous system.

2. Metabolic disorders in brain trauma are poorly understood. This is significant not only for the management of the case and the improvement of morbidity and mortality, but also for the light it throws on the role of the central nervous system in influencing metabolism. Such disorders may be transient or severe. The transient disorders of metabolism occur in about 60 per cent of severe concussion cases and the major, more lasting disorders in about 25 per cent. The occurrence of the latter is, however, related to a mortality rate of over 60 per cent in such cases. The transient proteinurias and glycosurias often relate quite adequately to the general response to trauma and only occasionally may be inexplicable in these terms. The major disorders include water deprivation, diabetes insipidus, respiratory alkalosis, diabetes mellitus, disturbances of electrolyte metabolism, especially for sodium and chloride, and uremia due to acute renal failure with tubular necrosis. The data accumulated so far allow us only a qualitative description of such complications, and their mechanism and significance in relation to brain function await the result of further investigation. Some of these disorders are primarily due to the brain injury and not to the secondary complications which ensue in the unconscious patient, e.g., dehydration due to inadequate water intake. The observation of focal brain lesions, both experimentally and in clinical practice, has revealed that many of the disorders mentioned can be produced in this way. The hypothalamus and posterior orbital cortex are particular areas from which such results are produced by lesions, but more research is required in this field.

3. There is the problem of cerebral edema. This too is a very controversial field. It would appear that there is more than one type of edema involved, that intra- and extracellular spaces are probably involved separately and that the disruption of the blood-brain barrier is closely related. The relative significance of the edema around areas of contusion and laceration and that seen in concussion without such macroscopic lesions is not clearly understood. Moreover, there is some evidence to suggest that focal lesions near or in the hypothalamus may be related to the more diffuse type of cerebral edema. Whatever the mechanism involved, the management of edema is essentially that of the raised intracranial pressure, in which guise it presents in the closed head injury. There is no rationale for the outmoded treatment by dehydration, which may indeed confuse the clinical picture by affecting the level of consciousness and vital functions. The first step is to exclude the surgically more remediable causes of raised intracranial pressure, such as intracranial hematomas, or the localized edema in a pulped temporal or frontal lobe by clinical examination and special investigations if required. The treatment of more diffuse edema is by agents which reduce the bulk of the brain, such as urea and mannitol. It must also be remembered that respiratory impairment can aggravate existing edema. Finally, hypothermia may be helpful, although this is not yet clearly defined.

4. One aspect that has caused considerable interest and research in the past decade is the role of hypothermia in the management of head injury. The effects of lowering body temperature in such cases show a number of benefits. In the unconscious severe case of concussion the high respiratory rate falls, excessive bronchial secretions diminish to improve the airway, and muscular tone is decreased. This latter effect is particularly noted in cases showing severe decerebrate hypertonic spasms when the decrease of muscular activity reduces the metabolic demands of the body. On the brain itself hypothermia decreases brain bulk and thus intracranial pressure. As in tissue elsewhere, it also reduces oxygen requirements, allowing the brain to subsist at a lower metabolic level which may be that existing in the post-traumatic stage. For the latter two reasons hypothermia has been suggested in the treatment of cerebral edema. There is some evidence to show that although cooling can diminish or prevent edema considerably and protect anoxic brain at the site of edema, it may not be effective in reversing established cerebral swelling. Further study of the best techniques, indications, optimum levels of hypothermia, and its effects is required, but it appears to be a useful method of treatment.

The Social Problem

The return to society of the patient after a head injury is the real test of quality of recovery. The majority of cases pursue their uneventful, uncomplicated course and the patients return to work unimpaired to all intents and purposes. However, in a proportion of cases, a variety of sequelae impair the reinstatement of the patient as a responsible factor in the social economy. These sequelae are conveniently grouped into two, i.e., the neurologic and the psychologic. The neurologic sequelae include the various residuals of focal brain and cranial nerve injury, such as epilepsy, motor weakness or paralysis, and headache. The psychologic sequelae are anxiety, irritability, difficulty in mental concentration, fatigability, dizziness without vertigo, and difficulties of memory. An important point is that, although the neurologic sequelae appear to correlate well with the severity of the concussion, the psychologic sequelae do not. Often a very severe set of symptoms results from a very trivial head injury. However, the ability to return to work, which is the main social problem, seems to fit quite well with the length of the post-traumatic amnesia. Thus, in cases with PTA of less than 1 hour, the patient returns much sooner to work than if the PTA were of longer duration. A useful attitude is to avoid extremes in the management of the convalescence. Thus, forcing early activity on a patient with headaches due to unrecognized traumatic subarachnoid hemorrhage is as bad as treating a minor concussion with a prolonged period of invalidism. The presence of definite neurologic signs should make one cautious to encourage early restoration of full activity.

There are a number of other factors. Age and the pretraumatic personality are very important. Trauma to the brain of a person past middle age is much more drastic in its effects than in the younger patient. So often one hears of the relatives' plaint that "after his accident he has put on 10 years." Personality is as yet an intangible; as J. M. Potter puts it, "A few are badly shaken by a relatively mild physical trauma, while at the other end of the scale a certain type of man will remain stolidly unmoved by a more severe accident and will return to the saddle of his offending motorcycle as soon as he leaves the hospital." There is considerable research now being done on the behavioral measurement of personality and it is not unlikely that in the near future we will have precise tests which will enable us to predict the reactions of patients to stress and thus facilitate their convalescence. Until then we must perforce be guided by a cautious appraisal of how the patient responds to a graduated return to normal activity. Apart from the factors of the injury itself and the age and personality of the patient, we must realize that the occupation of the patient and his domestic situation are very significant. A skilled mechanic, craftsman, or professional person interested in his work usually makes a much faster and sounder return to an effective social position than an unskilled laborer or someone who is uninterested in his means of livelihood. In the former group the patient's occupation will be the best form of occupational therapy; in the latter it will not, and may even be the cause of aggravation of the psychologic sequelae to trauma.

With regard to the domestic environment, it is essential to interview the marriage partner. What may appear to be a good adjustment after a head injury is often revealed to be fraught with marital discord. The partner in marriage should be advised that endless tolerance is the only effective means of securing a completely successful readjustment.

It will have become clear from the few aspects

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Is Your Emergency Room Ready?*

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THE IMPACT OF EMERGENCY SERVICES upon patterns of medical practice in this country is such that it is imperative that we step back and take a really objective look at the situation.

In a recent study covering 300 American hospitals, Dr. James McCarrol, of Cornell University Medical School, found that the emergency room is no longer just an "accident clinic" but now doubles as an outpatient department, and even substitutes for the office of the private physician, often being the first choice for medical care of any kind. He reported a 400 to 600 per cent jump in patient use since World War II.

The emergency room, in the vast majority of instances, is a vital unit of the outpatient department, both organizationally and administratively.

That more and more hospitals and their medical staffs are using organized ambulatory care to meet community needs and demands is exemplified by the tremendous increase in such services and facilities in the past few years.

In 1948 about one-half of the non-Federal short-term general and specialty hospitals in this country reported having organized outpatient departments, handling three-fourths of the 43,431,338 visits to all outpatient facilities. This was approximately 1 outpatient visit per day for each 3.5 occupied beds.

While the population has increased approximately 2 per cent per year, utilization of outpatient services has maintained about 6 per cent increase annually.

From 1954 to 1958 such visits increased 30 per cent, to 62 million, 34 million of which were regular visits, 11 million unspecified, and 17 million emergency visits, an increase in the latter of 81 per cent.

For the current year, estimates of hospital outpatient visits run as high as 90 million, an average of about 1 visit daily for each occupied bed and at least 10 per cent of all nonhospital services by physicians. A survey of a large teaching hospital in a metropolitan area revealed that $\frac{1}{3}$ of all the outpatients obtained essentially all their ambulatory care from the hospital outpatient department.

In this same hospital 50 per cent of the patients entering the emergency room were classified as emergency, or urgent, and 31 per cent as non-urgent; 15 per cent were scheduled visits, and 4 per cent were uncertain.

The Division of Accident Prevention of the U. S. Public Health Service, in a study under way in San Francisco, defines emergency cases not by lists of diagnoses but as all patients who come into the emergency clinic system. A few examples of demand for services of the emergency room can be found among some of the more spectacular instances, such as accident cases, which so often land in this unit.

Accidents rank as the fourth biggest killer in the United States, and the leading cause of death among age groups from 1 through 34 years. The Division of Accident Prevention reports that accidents injure and impair, often with disabling severity, more people than any disease, and that their impact is heaviest in those age groups from which the Nation must draw the bulk of its productive and military strength.

Accidents causing impairment of limbs and torso, about $7\frac{1}{2}$ million cases, caused 75 per cent of all amputations in this country. Of the total $3\frac{1}{2}$ million visual impairments, accidents caused over $\frac{1}{2}$ million, with hearing impairments due to accidents running almost as high. About 15 per cent of the 100,000 paralysis cases annually are due to accidents.

We have a suicide rate of about 11 per 100,000 population, with 5 unsuccessful ones for each success, and the large proportion of both find their way to the emergency room.

At least one major and numerous minor catastrophies strike our communities each year. The Metropolitan Life Insurance Company, which issues data on these catastrophies, reports that during 2 decades, 1940–1960, there were many minor and 23 major catastrophies where loss of life exceeded 100. These major catastrophies accounted for 4,300 fatalities, an average of 187 per incident. The three greatest were the Texas City fire and explosion in 1947, in which 561 lives were lost, the Cocoanut Grove fire in Boston in 1942, which killed 492, and hurricane Audrey in June, 1957, which killed about 395.

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All catastrophies in those decades resulted in 27,000 deaths, of which 7,600 were from fires and explosions, about 6,000 from motor vehicle accidents, and nearly 5,000 from tornadoes, hurricanes and floods.

Three-fourths of all deaths in catastrophies were in accidents in which fewer than 25 persons were killed, and 60 per cent were in incidents in which 5 to 9 deaths occurred.

Following this period, in 1961 alone, civil aviation, which accounted for 1/5 of all catastrophic deaths, had 3 incidents which led to a total of 192 deaths; a hurricane and a midwestern flood were responsible for 75 deaths.

Traffic accidents, of course, constitute an area of major concern, with our more than 76 million registered vehicles; and, as in the past, we can expect this number to increase annually.

In 1961 the National Safety Council reported 38,000 deaths from motor vehicle accidents, a rate of 20.8 per 100,000 population. At the same time 1,400,000 individuals suffered nonfatal but disabling injuries, 120,000 with permanent impairment, in such accidents. Total costs of all these accidents are estimated at almost 7 billion dollars.

Even as I talk with you, this period of 20 minutes, 4 Americans will be killed and 350 injured in accidents.

Poison centers have increased from 2 to 442 in the past 10 years. The Medical Bureau of the Medical Society of the District of Columbia, as you know, maintains the largest exclusively medical answering service in the country. In addition to keeping track of over 800 physicians, and a referral service, its 30 operators at 8 switchboards answer more than 60,000 calls per month, many of which involve frantic search for help in varying degrees of emergencies. It maintains direct lines to all hospitals in the District, an ambulance service, and the Washington offices of the American Hospital Association and the American Medical Association. I am certain that a fair number of patients, about whom many of these calls are made, end up being seen in some hospital emergency room.

All the foregoing would indicate not only an actual increase in real emergencies, but that the public more and more looks to the emergency clinic for "instant medical care."

Insurance schemes are following this trend. In the United States, Blue Cross, which has more than doubled its membership since World War II, has, in 10 years, increased from 40 million to 56,489,259. Cases paid per 1,000 members for hospital inpatient care increased from 100 in 1947 to 142 in 1961. Payment for outpatient care increased, in the same period, from about 12 to 61 per 1,000 members, for a total of 3,445,829 visits in 1961.

In Canada, payment by Blue Cross for inpatient care dropped from 114 in 1960 to 112 per 1,000 members in 1961, while payment for outpatient services increased by 22 per cent.

In 1961, 93.1 per cent of the 5,309 short-term general and other special hospitals in the country reported maintaining an emergency room, more than the number reporting obstetrical delivery rooms.

The Committee on Trauma of the American College of Surgeons, along with other members of the medical profession, hospital administrators, and others, have given serious thought to the subject. The Committee has recently issued a very useful booklet, "A Model of a Hospital Emergency Department."

This booklet speaks of the 2 million patients seen in these units in New York City in 1960 and states, "Projected nationally this dramatic figure in utilization attests that these facilities are among the most potent public relations instruments available to the medical profession."

It further states that the emergency clinic must become the combined responsibility of all branches of the hospital staff, adding, "The public has come to look upon the emergency department as the community medical center where any may apply, with any complaint, at any hour of the day or night, and expect prompt and courteous attention as his due. This concept must be accepted as a community obligation by governing boards, hospital administrators, and the profession."

The Committee is continuing its attention to this, too often, weak link in the chain of hospital care.

I might share with you some aspects of standards which I have submitted for its consideration.

Standards for Emergency Services

A. *Authority.* Policies covering organization, administration, services and relationships of the

Emergency Unit or Department should be formulated, implemented and periodically evaluated and reviewed under the auspices of the governing authority, the medical staff and administration, acting through a representative committee.

B. *Relationships.* The status of the Unit should be equal to that delegated to other major departments and activities, consistent with the program, scope and services of the hopsital, of which it must be an integral part.

C. *Organization.*

1. The Service should be under the immediate direction and supervision of a competent individual responsible to the above committee. Tenure in the position should be sufficient to provide clinical, administrative, and program continuity.
2. *Personnel.*
   a. Medical staff coverage should be sufficient to ensure that an applicant for treatment will be seen by a doctor within 15 minutes of arrival.
   b. A doctor on second call should be available against unexpected or unusual contingencies.
   c. There should be a mechanism whereby specialized medical services can be obtained as promptly as possible when needed.
   d. A roster of available specialists should be posted in the emergency room area.
   e. The nursing staff should be adequate to handle the average load with provision for additional nursing help during peak hours or unusual circumstances. Permanent tenure of the senior nursing staff or supervisor is desirable.
   f. Whenever practicable the nursing staff should not be required to carry out administrative duties normally performed by the business office.

D. *Records.*

1. Medical records should be maintained on all patients cared for in the Emergency Unit.
2. Such records should contain an accurate description of the condition of the patient on admission, care and treatment administered, disposition of the patient, and his condition upon release from the Emergency Unit.
3. Policies of the hospital and its Medical Records Committee should be adhered to in relation to forms, records, maintenance, filing, confidentiality, and legal aspects.
4. Emergency room records activities should be an extension of the hospital Medical Records Department, or coördinated therewith.
5. The attending physician should be responsible for the content and completion of the patients' records.
6. Periodic review of records should be undertaken to ensure adequacy and quality of patient care.

E. *General Policies, Procedures, Standing Orders.*

1. These should be developed, in writing, and incorporated in a manual kept available to the staff and other personnel.
2. The manual should be reviewed periodically by the Committee.
3. Specific medical, nursing, and administrative policies should cover 24-hour operation.
4. Definitions should be established as to what constitutes an emergency.
5. Types of patients to be cared for must be established:
   a. General public
   b. Private physicians' patients
   c. Police cases
   d. Employees and students
6. Consent for Treatments agreements, forms and procedures are required.
7. "Dead on Arrival" policies and procedures are necessary.
8. Treatment policies and procedures should cover:
   a. Diagnostic
      (1) Laboratory
      (2) X-ray
      (3) Consultation
   b. Therapeutic
      (1) Accidents (major and minor)
      (2) Anesthesia
      (3) Bites—dog, etc.
      (4) Burns
      (5) Fractures
      (6) Head injuries
      (7) Immunizations
      (8) Lacerations
      (9) Poisoning
      (10) Shock
      (11) Tetanus
      (12) Transfusions
      (13) Mental patients (observation, restraints, tranquilizers, legal implications)
9. Drugs and narcotics policies, procedures and security should cover:

   a. Administration
   b. Dispensing
   c. Storage
   d. Records
   (Note: A poison control chart and the telephone number of the nearest poison control center should be displayed in a prominent place.)
10. Release from responsibility policies, forms and procedures need to be established.
11. Follow-up of patients is an important policy in relation to continuity of care.
12. Personnel policies, as in other Departments, are necessary.
13. Equipment and supplies policies and procedures make for efficiency and economy.
14. General policies and procedures should cover:
   a. Business records
   b. Budget
   c. Statistics
   d. Fire
   e. Safety
   f. Maintenance
   g. Housekeeping
   h. Traffic
   i. Public relations
   j. Professional education
   k. General legal aspects
   l. General evaluation

F. *Physical Facilities.*

1. The Emergency Unit should be located in an area easily accessible to the emergency patient entrance and away from the main hospital entrance.
2. The emergency entrance should be well marked and illuminated, easily accessible from the street, without curbs or platforms, and sufficiently covered and enclosed to protect ambulance patients from the elements during unloading.
3. Space for stretchers and wheelchairs should be reserved immediately adjacent to the entrance. Stretchers should be sturdy enough to serve as examining tables and ideally should be X-ray permeable.
4. There should be waiting room space, separated from the working area, and containing telephone, toilet and drinking fountain.
5. Facilities to be considered, adapted to the program of the hospital, include:
   a. Examining and treatment rooms
   b. Observation beds
   c. Doctors' call room
   d. Security room
   e. Police, ambulance attendants, and reporters' room
   f. Family room
   g. Utility room
   h. Nurses' station
   i. Drug, supply, equipment, and housekeeping storage
   j. Janitor's closet
   k. Admitting, records, and business offices
   l. Staff toilets
6. Facilities should be of sufficient size to accommodate the personnel, equipment and supplies required for good patient care.
7. X-ray and laboratory services should be available in or easily accessible.
8. There should be facilities for equipment and supplies in or convenient to the Emergency Unit, or provisions for efficient services from a central area.

The hospital which is prepared to handle the minor emergency in an expeditious manner will be in a position to cope with the major one, the catastrophe, the disaster. It will stand ready to serve the community in the way it expects to be served and to make it possible for the medical profession to render the quality of care which is desirable.

This does not come about by chance and by accident. It requires good planning, organization, programs and procedures with continuing evaluation—in short, good administration. The medical staff is vitally concerned in all of these phases.

I hope you will take back to your hospital an interest in helping the medical staff and administration develop and improve emergency services in your own institution.

PRESIDENT'S PAGE

GOVERNMENT BY COMMITTEE

The days of "town meetings" are a thing of the past for organizations as well as for cities and corporations. No one in the Nation's Capital is unaware of the importance of committee assignments in the Senate and the House of Representatives, and the citizens of the District of Columbia are especially aware of their reliance on the Senate and House District Committees for policies affecting their welfare.

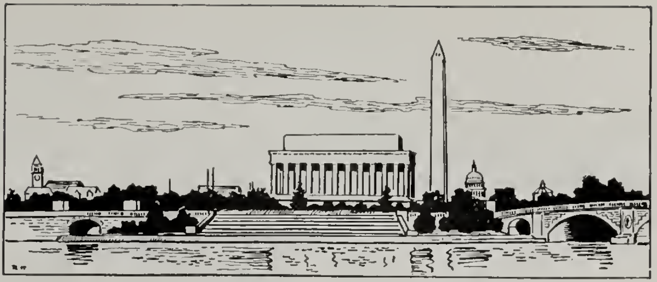
In the Medical Society of the District of Columbia as well, meetings when policies and administrative procedures were threshed out in the Society's auditorium are long past. This was particularly noticeable at the last Annual Business Meeting, when less than 4 per cent of our members were present to state their views on the important subject of retaining or selling the Medical Society building.

In making committee appointments this year I have endeavored to spread the responsibility among the membership as widely as possible, bearing in mind the committee preferences which you returned to the Society's Executive Offices. It is in committee meetings that the work of this Society will go forward. Therefore, I urge that when you accept assignments you do so with full knowledge of the time and effort involved in attending and participating in meetings. Paradoxically, those who sacrifice the most to meet such responsibility almost invariably are the first to admit that they receive more than they give. I hope that will be true for each of you at the close of 1963.

Corley

KARL COATES CORLEY, M.D., F.A.C.R.

President, The Medical Society of the District of Columbia, 1963



EDITORIALS

Karl Coates Corley, A.B., M.D., F.A.C.R.

For the 96th President, the Medical Society of the District of Columbia has again selected one of its younger members, and it is expected that the year's activities will reflect his vigor and enthusiasm.

Dr. Corley, a Washingtonian, was born October 15, 1906, to the late Dr. Karl C. Corley, Sr. and Ida Hill Corley. His father was a prominent Washington physician before him, also an Active member of the D.C. Medical Society, who practiced in the District from 1905 until his death in 1930.

Young Dr. Corley attended the public schools of Washington and graduated from Williams College (Mass.) in 1928. Four years later he received his medical degree from Georgetown University. He interned at Garfield Memorial Hospital, now a part of the Washington Hospital Center, and served a year's residency at the Columbia Hospital for Women.

Dr. Corley served with distinction in two wars. He had been in practice only a few years when World War II began. He enlisted in the Armed Forces in 1942 and served with the 81st Field Hospital, AUS, in the Rhineland and Central European campaigns. When he returned to Washington in 1945 he held the commission of Major. He decided then to specialize in radiology, and after training a year at Georgetown University Hospital became affiliated with the radiological group of Groover, Christie and Merritt, with offices at 1835 Eye Street, N.W. With the advent of the Korean War in 1950 he was recalled to active duty and served, with the rank of Lt. Colonel, for another two years. Upon returning to resume an interrupted practice for the second time, he took on the additional duties of associate head of the Department of Radiology at Doctors Hospital.

Dr. Corley already has given much of his time and talents to the D.C. Medical Society, which he joined in 1937. He was a member of the Executive Board from 1954 to 1956, Chairman of the Grievance Committee, 1957–60, an alternate delegate to the American Medical Association during 1960 and 1961, and during the past year has served on the Executive Board by virtue of his office as President-elect.

His memberships in scientific organizations include the American Medical Association, the American College of Radiology, the American Roentgen Ray Society, and the Radiological Society of North America. He is a diplomate of the American Board of Radiology. He is Past President of the Kenwood Citizens' Association and belongs to the Chevy Chase and Army and Navy Clubs. He is a member of the Chevy Chase Presbyterian Church.

For recreation Dr. Corley plays golf with his colleagues; he is a 15-handicapper who scores in the middle 80's. Interested in travel, photography, and archeology, he uses his vacations to explore new places. In 1961 he was in Greece and Italy on a classical tour; in 1962 he visited Yucatan, Guatemala and Mexico City, exploring the Maya and Aztec ruins. His varied interests also include home talent shows, for which the Kenwood Citizens' Men's Show provides an outlet.

Dr. Corley and his wife, the former Isabel F. Southgate, live at 5301 Chamberlin Avenue in Chevy Chase, Md. They have two children, Karl C., Jr., a research associate at the University of Rochester, in the Department of Brain Research, and Alice S., who is a senior this year at Connecticut College.

Your Editorial Board is pleased to present to its members their new President.

Doctor!

Lung Cancer Death Rates are 10 times as high among regular smokers as among those who never smoke . . . 20 times as high among two-pack-a-day smokers.

Your attitude and action may well be decisive in determining whether or not people smoke.

A Film, "Lung Cancer: The Problem of Early Diagnosis" is available for showing to physicians.

Call or Write American Cancer Society, District of Columbia Division, 810-18th Street, N.W., Washington 6, D.C.

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Proceedings of the Annual Business Meeting

Dr. J. Spencer Dryden, President of the Medical Society of the District of Columbia, presided at the Annual Business Meeting of the Society, held in the auditorium the evening of November 14. The Annual Reports of the Chairman of the Executive Board, the Secretary-Treasurer, and the Chairman of the Board of Credentials were approved without reading. These reports were published in the October, 1962 issue of the Medical Annals to give members an opportunity to study their contents before the meeting.

Dr. James W. Watts, Chairman of the Executive Board, read the Supplementary Report of the Board, which is published following these proceedings. This report covers actions of the Board taken after the October issue of the Annals had gone to press and contains recommended changes in the Constitution and By-laws. The report, as a whole, was approved with the exception of the "Recommendations Relating to the Present Headquarters Building and Possible Changes in the Future." This recommendation of the Executive Board brought forth considerable discussion. A motion was made, seconded and carried that the resolved portion of the Executive Board's recommendation be deleted and the following substituted in its place: "That the Executive Board be empowered to enter into the negotiations for the disposal of the present property and for the purchase of other property, but that it not complete or sign any contract until the matter is presented before the Society in open meeting."

Dr. C. Willard Camalier, Jr. and Dr. Henry L. Darner were nominated to succeed themselves on the Board of Trustees of Medical Service for 3-year terms. Dr. Alfred A. J. Den was nominated to succeed Dr. Edgar McPeak on the Board of Trustees of Medical Service for a 3-year term. Dr. McPeak had asked not to be nominated for another term.

Dr. Ralph D. Whitley was appointed to succeed himself as a member of the Board of Trustees of Group Hospitalization Inc. for a term of 5 years.

Election of Officers

Dr. Herbert P. Ramsey, Chairman of the Nominating Committee, submitted the nominees for the various offices in the Society for 1963. On motions made and seconded for each nominee, the following were unanimously elected:

President-elect: Dr. Edward W. Nicklas
First Vice President: Dr. J. Rogers Young
Second Vice President: Dr. Grace H. Guin
Member of the Executive Board for a 4-year term: Dr. J. Spencer Dryden
Member of the Board of Credentials for a 3-year term: Dr. Lawrence A. Rapee
Delegate to the American Medical Association for a 2-year term: Dr. Raymond T. Holden
Alternate Delegate to the American Medical Association for a 2-year term: Dr. Clifton R. Gruver

Dr. Dryden introduced Dr. Karl C. Corley, President-elect for 1963. He also introduced the President-elect for 1964, Dr. Nicklas, and each of the other officers elected at this meeting.

Deceased Members

Members rose at this point to pay silent tribute to members of the Society who had died during the past year. The list of deceased members, read by the Chairman, follows.

Brown, Grafton T. (Active)—December 26, 1961
Cardozo, W. Warrick (Active)—August 11, 1962
Casady, John W. (Active)—March 3, 1962
Clark, George C. (Life)—April 26, 1961; notified February 7, 1962
Coale, Edith S. (Life)—November 2, 1962
Crawford, Harry J. (Associate)—February 4, 1962
Daly, Joseph M. (Active)—August 19, 1962
Dub, Leonard M. (Active)—January 2, 1962
Eldridge, Watson W. (Associate)—July 4, 1962
Fishback, Frederick C. (Active)—November 23, 1961
Guynn, Ray F. (Active)—August 18, 1962
Halley, Charles R. L. (Active)—July 15, 1962
Jarman, Bernard L. (Active)—July 15, 1962
Karpman, Benjamin (Active)—May 17, 1962
Leslie, Frank G. (Associate)—September 11, 1962
Lyons, John H. (Active)—February 17, 1962
Martinez, Felippe A. (Associate)—August 4, 1962
Naiman, Benjamin (Associate)—April 23, 1962
Parker, Wendell A. (Active)—March 20, 1962
Reed, John A. (Active)—June 7, 1962
Reeves, George W. (Active)—August 16, 1962
Scheuch, Charles D. (Associate)—January 27, 1962
White, Davenport (Life)—February 9, 1962

Election of Members

Since the Executive Board elects all members for only a year's probationary period, the list of 78 physicians (58 Active and 20 Associate) elected during the previous year was submitted and approved, thus declaring them eligible for full membership privileges.

Presidential Awards

At this point, the Chairman turned the meeting over to Dr. Watts, who, in turn, presented an inscribed gavel to the President, Dr. J. Spencer

Dryden, in appreciation of his service during his term of office for the year 1962.

Dr. Dryden presented a Certificate of Appreciation to Dr. Donald Stubbs for his services during the year 1961. Dr. Stubbs responded briefly and expressed his appreciation for the thoughts conveyed with his certificate.

The meeting was attended by 73 Active and Life members. The meeting was adjourned and the group gathered in the library for refreshments.

Supplementary Report of the Chairman of the Executive Board

THIS REPORT will summarize actions of the Executive Board subsequent to publication of the Annual Report (see October issue of the MEDICAL ANNALS) which require approval by the Society. It will also bring to you several amendments to the Constitution and By-laws recommended by the Executive Board.

Recommendations Relating to the Present Headquarters Building and Possible Changes in the Future. For a number of years the House Committee and the Executive Board have considered the possibility of disposing of the present Society buildings and acquiring a new headquarters. Several factors seem uppermost in such a consideration:

1. The present headquarters are adequate spacewise; they are actually far too large and cumbersome for the present-day needs of this Society. Our office and meeting-room requirements can be fulfilled by a building of smaller size than the present one if it is properly arranged and situated.

2. Because of their age and vintage, the buildings 1710 and 1718 M Street are costly to maintain, and the expense of maintenance and repair will steadily increase.

3. The location of the property is in one of the areas of highest property values, with new office buildings being erected on all sides.

4. Parking space is a major problem and there is little to indicate it will improve.

5. The property is free of mortgage and represents a large investment but leaves the Society with little available cash.

6. Nevertheless, the House Committee and Executive Board are of the opinion that the best interests of the Society will be served by having its own identifiable headquarters building to house its business activities, the many committee and Section meetings, and meetings of related medical groups.

7. Finally, recent experience has shown that prompt action may be necessary to take advantage of an opportunity to sell one piece of property and acquire another at an advantageous price. To expedite this, authority to act should be vested in the Board.

In view of these and other factors, your Executive Board proposes the following:

WHEREAS, the present Society Headquarters will require ever-increasing maintenance and repair costs, and

WHEREAS, it no longer fulfills the needs of the Society or its members in an economical manner because of the change in meeting room and other requirements, and

WHEREAS, the present location is in an area of existing and planned large office buildings which has increased land values but reduced available parking space, *therefore*

Be it resolved, That the Executive Board be authorized to make such disposition of this property (1710 and 1718 M Street, N.W.) as seems in its judgment to be in the best interest of the Society, and to enter into contracts for the acquisition of such other property and the construction of such a building as would be in its judgment in the best interest of the Society.

Estimated Budget for 1963. Each of you has received a copy of the estimated budget for 1963.

The first item under the Estimated Budget is income and includes membership dues of $113,335 plus other income of $188,050, making a total estimate of $301,385. I believe the individual items are self-explanatory: ASSEMBLY ($14,000), MEDICAL ANNALS ($42,050), MEDICAL BUREAU ($122,500), rental from 1710 M Street ($8,000), and a Miscellaneous item of $1,500.

The expenses have been divided into 7 categories.

1. Office staffing includes all monies paid out for staff personnel (10 employees), their fringe benefits, Social Security, and the costs of such personal services as are provided by the attorney and auditors. It is estimated at $59,200.

2. Society programs include the ASSEMBLY, committee operations, meeting costs, funds used to send physician representatives to conferences, and membership in civic groups. This will approximate $24,450.

3. Building maintenance of $9,300 is, of course, self-evident and refers to the cost of maintaining 1718 M Street.

4. Office operations of $14,450 include the cost of equipment and supplies for Society business.

5. 1710 M Street refers to the cost of maintaining that portion of the building rented to various tenants and a portion of the Executive Offices and will come to about $8,750. If we can reduce some costs of maintenance, more money will be available for Society programs.

6. The MEDICAL ANNALS, if our estimates are correct, will require expenditure of some $56,000, and therefore again needs to be assisted from dues income to the extent of some $14,000. However, we hope to revise the format and establish a system for expanding and contracting the publication so that costs will more closely approximate income.

7. The MEDICAL BUREAU continues to carry itself despite the ever-increasing number of calls handled each year and the resultant increase in personnel costs. At present the BUREAU employs 24 full-time operators and 4 relief operators. Total cost should approximate $120,300.

Not included in the budget are such items as capital expenditures which this year (1962) amount to $3,906.43.

The Society's books will be closed as of December 31, 1962 and audited by Wayne Kendrick and Company. The audit of income and expenses will be published in an early 1963 issue of the ANNALS.

If any member is interested in details as to income and expense, he may obtain information from the Secretary-Treasurer.

Nominations to the Board of Trustees of Medical Service. At its meeting on October 29 the Executive Board voted to submit the following nominations to the Board of Trustees of Medical Service for 3-year terms:

Dr. C. Willard Camalier, Jr., to succeed himself

Dr. Henry L. Darner, to succeed himself

Dr. Alfred A. J. Den, to succeed Dr. Edgar McPeak, who has asked not to be renominated.

Nomination to the Board of Trustees of Group Hospitalization, Inc. At its meeting on October 29 the Executive Board voted to propose the following as a member of the Board of Trustees of Group Hospitalization, Inc. for a 5-year term: Dr. Ralph D. Whitley, to succeed himself.

Proposed Amendments to the Constitution and By-laws. Each of you has a copy of proposed Amendments VI, VII and VIII.

Amendment VI

Chapter X, Article II of the Constitution and By-laws, which authorizes the Sections of this Society, is hereby amended to add thereto the following:

Section 16. General Surgery

Section 17. Thoracic and Cardiovascular Surgery

Amendment VII

This Amendment refers to Chapter III, Article I, Section I of the Constitution and By-laws, which reads as follows:

> "The Annual Scientific Assembly shall be held in November and the Midwinter Seminar in February of each year on dates determined by the Executive Board. This section may be altered by action of the Board as to the time these meetings are held.
>
> "The annual business meeting of the Society shall be held in November preceding the opening session of the Annual Scientific Assembly, on a date selected by the Executive Board. This meeting shall be devoted to the reception of annual reports and other business including the nomination and election of officers as hereinafter provided."

Article I, Section I of Chapter III is hereby repealed and the following substituted therefor:

> "The Executive Board shall establish the dates for the Annual Scientific Assembly and such other scientific or other general programs as it deems necessary.
>
> "The Annual Business Meeting of the Society shall be held within 30 days of the Annual Scientific Assembly. This meeting shall be devoted to the reception of annual reports and other business, including the nomination and election of officers as hereinafter provided."

Amendment VIII

This Amendment would repeal Chapter IX, Article XI of the Constitution and By-laws, which reads as follows:

> "The Case Review Committee shall consist of 12 members of the Society, 4 of whom shall be appointed each for a term of 3 years. The Committee shall have power to act through subcommittees. The Committee shall receive from member physicians complaints in matters of claims and suits arising from alleged malpractice, unethical or other conduct of such physicians; shall confer with such physicians and their counsel or representatives and consider all material, records and available information concerning such claims or suits; shall have power to summon and confer with members of the Society and shall advise the complaining physicians with respect to such claims or suits against them."

It is recommended that Article XI, Chapter IX be hereby repealed.

Future Prospects

Medical care is in the public eye. The press is giving it front-page coverage. Letters to editors denounce and support medical care for the aged, and last week in the Congressional elections it was a major issue. Television dramatizations about doctors, nurses and hospitals compete successfully with comedies and Westerns.

Since the Medical Society of the District of Columbia was founded in 1817 there have been profound changes in the science of medicine. Advances have been so rapid it has required a sustained effort for medical schools, teaching hospitals and practicing physicians to keep abreast of new developments.

Equally as significant as the scientific changes are the economic developments. Two World Wars, the Veterans Administration and other Federal programs, the increase in specialization, and prepayment medical care plans have revolutionized medicine.

Our Society has been a pioneer in the Blue Cross and Blue Shield movements and has taken the initiative in making them effective organizations to meet the needs of the people who receive care and the physicians who administer it. To think only of the physician would be callous; to think only of the patients and neglect the interest of doctors would lead to poor medical care. If incentive is eliminated, medicine as a profession loses its appeal.

The public and the administration are moving more rapidly in the field of medical economics than the doctors themselves. As a result, organized medicine is looked upon by some as reactionary, obstructive, and even selfish. It is rather natural that physicians who have spent their lives studying and living medicine should feel they perhaps are best qualified to chart the course of medical care.

I'm inclined to think there must be some other basic reason for our opposition to medical care of the aged under Social Security. The tremendous scientific advances made in the last quarter century attest to the progressive character of doctors. Our neighbors do not consider us more selfish than lawyers, engineers, or politicians.

As I tried to find an answer, I remembered something which Mr. Benjamin M. McKelway, Editor of *The Evening and Sunday Star*, said during a lecture in this auditorium a good many years ago. He was talking about the relations of the press to the medical profession. He mentioned that doctors are often critical of what newspapers say on medical topics and the stories they choose to feature. He said the chief cause of misunderstanding between newspaper men and doctors is that "to the press something new is news; to the physician, something new is untried."

Our indoctrination and experience have proved that something new is untried, is unproved. Many new drugs, new operations, and new procedures may appear to have great promise; but, as further evidence accumulates, they may prove to be of little value or even harmful. This also applies to programs of private industry, insurance companies, and Blue Cross and Blue Shield.

When a drug proves worthless, it is no longer prescribed. When an operation or procedure fails to live up to its expectations, it can be discarded. Private insurance, Blue Cross and Blue Shield programs can be revised or discontinued; but experience with the Veterans Administration and other governmental programs shows that once enacted into law they become so rigid and permanent as to make it impossible to discard or discontinue them.

If the profession is cautious in supporting Federal legislation in some of these areas, it is because we are concerned with the fact that, once enacted, the resultant programs cannot be withdrawn and continue on, whether good or bad. Perhaps this, then, is a partial answer to our opposition to "medical care for the aged" through legislation rather than through the voluntary programs which have proved so successful.

In this Supplementary Report, two changes in our Society organization have been recommended. The first is in reference to our headquarters and is designed to bring our facilities up-to-date so as to better serve ourselves and, in turn, the community by making the meetings of our committees and Sections and various related medical groups more accessible, thus providing greater participation in Society and medical activities.

The second concerns the Society's activities and is designed to provide more discretion on the part of the Executive Board in arranging for scientific and other meetings of the Society to better meet the interests of our members. Neither recommendation is an end in itself; both require continuous study and firm decision as to what is in the best interests of unity and solidarity of membership.

Other areas of concern will also require attention and serious consideration by the Society membership. Among these are: policy and attitude toward major medical insurance as well as Blue Shield coverage for the aged; improvement of medical care for the indigent and low income groups; the future of the Medical Annals, which continues to use more and more of the dues income; coördination of the wide variety of scientific programs sponsored by the many groups within the District; and determination of membership attitude toward health problems within the District so that a united front may be presented to the Senate and House Committees responsible for our laws and appropriations.

Of course, many other problems will confront us as a profession. Whatever they may be, it has been my experience as a member of your Executive Board that each of us must consider his personal interests in relation to their effect upon the interests of the community and of the profession as a whole. It is only through such an attitude that the good of our patients and our personal interests will eventually best be served.

Medicine as we have known it, with free choice and fee for service, will survive only if each physician looks beyond his personal gain.

James W. Watts, M.D., *Chairman*

International Health Activities

A Message from Your Woman's Auxiliary

Dear Doctors:

We need your help and coöperation. A new committee, International Health Activities (IHA), was organized by our House of Delegates. The committee has initiated two programs, World Medical Relief and International Hospitality. All of us in Washington can support both of these programs.

Under World Medical Relief the Auxiliary will set up a system for the collection of all the drug samples you might wish to contribute for shipment overseas to needy hospitals.

The following is a list of books (not more than 4 years old) requested:

Textbook of Medicine—Cecil
Current Therapy 1961—Conn
Christopher's Surgery—Davis
Obstetrics—Greenhill
Urology—Campbell
Pharmacological Basis of Therapeutics—Goodman and Gilman
Diseases of the Ear, Nose and Throat—Ballenger and Lederer
Obstetrics and Gynecology—Wilson, Beechman, Forman and Carrington
Operative Orthopedics—Campbell
Tropical Diseases—Manson
Pediatrics—Mitchell-Nelson
Diseases of Metabolism—Duncan
Principles of Practices of Anesthesiology—Collins
Hematology—Wintrobe
Pharmacology—Beckman
Surgery of Infancy and Childhood—Gross
Operations of General Surgery—Higgins and Orr
Roentgen Signs in Clinical Diagnosis—Meschan
Manual of Dermatology—published by Saunders for the Army
Ophthalmology—Gifford
Pharmacology—Sollman
Surgical Errors and Safeguards—Thorek
Office Gynecology—Greenhill
X-ray (6 volumes)—Yearbook Publishers

Textbooks on malnutrition and such specialty journals as the *New England Journal of Medicine* are most acceptable, along with last year's copy of Physicians' Desk Reference.

Supplies and medical instruments are also in demand. Muslin, old sheets, shirts, and reclaimed material (cleaned and packaged) are wanted for bandages. Any used instruments still in working order are among the needed items (even large instruments).

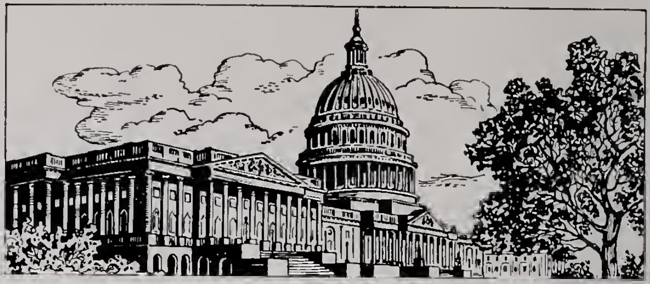
The drive will begin on January 15 and extend through February 28. A room will be set aside in the Medical Society Building as a collection depot. You may either deliver these personally or call the Medical Bureau. Your operators will have the names of volunteers from the Auxiliary who will be glad to pick up and deliver your donations and leave you a receipt for any tax-deductible items.

Your Auxiliary is most anxious to launch this program as its small part in sharing the bounty of our country with those so much less fortunate than we. Regional centers have been set up where all of these items will be packed and prepared for shipment overseas. The U. S. Navy will transport them; shipping costs are largely underwritten by the International Coöoperation Administration, a Federal agency.

International Hospitality emphasizes the need for what many of our local doctors are already doing, but if you haven't as yet extended your personal hospitality to those doctors from overseas who are here to further their medical education, we urge you to do so.

Thank you so much for your coöoperation.

Sincerely,
Mrs. John E. Morris, *President*
Mrs. Francis J. Murray, *Chairman, IHA*



NEWS & PERSONALS

Meetings

The Saint George Society of medical students of Georgetown, George Washington, and Howard Universities will meet in the auditorium of the D.C. Medical Society, February 4. Dr. Alexander Brunschwig, Chief of Gynecological Service and Attending Surgeon, Memorial Hospital for Cancer and Allied Diseases and the James Ewing Hospital of New York City, will be present to speak on "The Development of Surgery of the Female Genital Tract, with Particular Reference to Cancer."

All medical students are urged to attend the meetings of this Society. Physicians, nurses and other medical personnel are also cordially invited to participate. A social hour follows each meeting.

Boards & Committees

The Executive Board of the Medical Society of the District of Columbia met on November 19, 1962, with Dr. James W. Watts presiding. Others present were: Drs. Duane C. Richtmeyer, W. LeRoy Dunn, Victor R. Alfaro, J. Spencer Dryden, Karl C. Corley, Raymond T. Holden, C. Willard Camalier, Jr. (Junior Delegate to the AMA), Dr. Clifton R. Gruver (Alternate Delegate to Dr. Holden), and Mr. George W. Cooley, Secretary.

The following are some of the actions taken at this meeting:

Voted that the House Committee be directed to make a study of the present headquarters and property, its use, potential, and possible disposition, as well as the availability of other property and to report its findings and recommendations to the Executive Board for transmission to the Society.

Heard from Dr. William H. Ferguson, Chairman of the Insurance Committee, on the new Keogh legislation, and voted that the Society membership be advised that a group program is being developed by the Committee in reference to the use of both insurance and trust funds under the new Keogh legislation, and that the members be urged to withhold developing their own individual plans until this Society program is completed; and further, that the membership be advised that there is no need of urgency in this matter since physicians may enter into a program as late as December 1963 and still receive such benefits as are available under it.

Voted endorsement of the American Political Action Committee.

Voted to approve the following basic principles as fundamental to the support of the Interns and Residents, which, if applied, will lessen the economic pressure on medical students:

1. The graduate physician serving as Intern or Resident should receive financial support commensurate with his professional responsibilities and with due recognition of his educational opportunities.

2. The medical profession must assume an increasing responsibility for the development of appropriate methods of financial support of the Intern and Resident so as to accomplish the above objective. But that it is not prepared to accept the details presented in the Special Report on Compensation of Interns and Residents even though it recognizes a need for some change in the recruitment and payment of Interns and Residents, and that the delegates to the AMA be directed to express themselves accordingly if the report is presented to the AMA House of Delegates.

General News

The Division of Foreign Quarantine of the Public Health Service advises that International Certificates of Vaccination against Smallpox and Cholera should be authenticated by the health officer of the area in which the immunizing physician practices. In the District of Columbia the Health Officer is located in Room 6150, New Municipal Building, Third and Indiana Avenue, N.W., Washington 1, D.C. The health officers in the adjoining counties of Virginia and Maryland should perform this service for persons who receive their vaccinations from physicians in those areas.

Lt. Colonel Ralph J. Packard, Commander of the 7464th U. S. Army Reserve Transportation Army Terminal Station Complement, of Washington, D. C. announces that **several vacancies for U. S. Army Reserve military medical officers** exist in his unit. The vacancies are open to men who are presently assigned to medical duty in the Army Reserve program, regardless of branch of service. Also, positions may be filled by medical instructors in area colleges or universities who have a Reserve obligation to fulfill.

There are five vacancies in all: surgeon, one, in grade of Lieutenant Colonel; general medical officers, two, in grade of Captain; nurse, one, in grade of either Second or First Lieutenant; and general dental officer or dental surgeon, the former in grade up to Captain, the latter to grade of Major.

Colonel Packard may be contacted at District 7-5300, extension 527. Information may also be secured from Lt. Colonel James L. Hourrigan, Senior Medical Officer of the unit, at Dudley 8-2612.

The National Geriatrics Society announces its **Second Annual Essay Contest.** The subject for 1963 is "Relationship of Geriatric Institutions to Community Life." All papers are to be typewritten, in duplicate, and sent to the President, Dr. Joseph B. Enos, 38650 Mission Blvd., Niles, Calif., before March 15. The 6 awards range in amount from $500 for the First Award to 3 awards of $100. Winners will be announced at the 10th Annual Convention of the Society, to be held in New Orleans, May 6–9. Interested essayists should secure an identification number from the President before submitting their papers so they can be judged anonymously.

The Maryland-Washington D.C. Chapter of the National Hemophilia Foundation, Inc., a nonprofit organization, wants to get in touch with all families in the area where any member is afflicted with hemophilia in order to keep them informed of its services and meetings. The names and addresses of such families may be sent to the Maryland-Washington, D.C. Chapter, The National Hemophilia Foundation, Inc., 213 East 25th Street, Baltimore 18, Md., or physicians may contact Mr. Joseph Derenge, Acting Vice President, 2827–28th Street, N.W., Washington 8, D.C., telephone Woodley 7-4355.

The Section of Ophthalmology and Otolaryngology of the Southern Medical Association is preparing its program for the next meeting, which will be held in New Orleans, La., November 18–21, 1963. Papers will be accepted for consideration prior to May 15, 1963. A title and brief abstract of 75 words or less should be sent as soon as possible to the Secretary, Dr. Albert C. Esposito, 1212 First National Bank Building, Huntington, West Va.

The Section of Plastic Surgery of the Medical Society of the District of Columbia elected officers for 1963 at its meeting, November 27. They are:

> Dr. Arthur Dick, *Chairman;* Lt. Colonel Royce E. House, MC, USA, *Vice Chairman;* and Dr. Alfred J. Suraci, *Secretary-Treasurer.*

The next meeting of the Section will be at the Officers Club of the Bethesda Naval Hospital, January 22.

Dr. G. Donald Whedon has been appointed **Director of the National Institute of Arthritis and Metabolic Diseases** of the U.S. Public Health Service. He has served as Acting Director since the retirement of Dr. Floyd S. Daft. Dr. Whedon, who has been Assistant Director of the Institute since 1956, is also Chief of the Metabolic Diseases Branch, which he has headed since 1952. Dr. Whedon is nationally known for his work on disorders of calcium metabolism.

Children's Hospital and Hillcrest Children's Center have issued a joint statement announcing an affiliation of their psychiatric services. Under this reorganization the Medical Director of Hillcrest will be Dr. Reginald S.

Lourie. Dr. Lourie has been Chairman of the Department of Psychiatry at Children's Hospital and he will continue in that position.

Personals

Dr. Edward D. Freis, senior medical investigator of the Veterans Administration Hospital, was one of 12 physicians honored by the Association of Military Surgeons of the United States, November 13, during the Annual Meeting of the Association. Dr. Freis received the Sustaining Membership Award, which was established in 1958 by the Sustaining Members of the Association, for his outstanding contributions in research in the field of physiology and treatment of hypertension.

Dr. Freis, an Associate Member of the D. C. Medical Society, heads the VA's 11-hospital study of newer drugs for high blood pressure and is widely known for his own individual studies of hypertension. He is Associate Professor of Medicine at Georgetown University School of Medicine.

Dr. Oscar B. Hunter, Jr. was elected Vice Chairman of the Governing Council of the Southern Medical Association during its 56th Annual Meeting in Miami Beach, Fla., November 12–15, 1962.

Dr. Henry A. Monat was reëlected Governor for the District of Columbia by the American College of Gastroenterology during its Annual Meeting in Chicago, October 28.

Dr. Allan M. McKelvie, an orthopedist, spent the month of November in Algeria, where he took charge of a 9-doctor team on the staff of Beni Messous Hospital. He is serving under a program instituted by MEDICO, a service of CARE.

Dr. Lawrence E. Putnam has been elected to the Medical Board of the Washington Hospital Center. He recently resigned as Editor-in-Chief of *Antibiotics & Chemotherapy*, a post which he has held for the past 3 years.

Mammography—Thomas and McDonald

(Continued from page 10)

12. Gershon-Cohen, J., and Ingleby, H.: J.A.M.A., 1958, 166, 869.
13. Gershon-Cohen, J., Ingleby, H., and Moore, L.: Ibid., 1956, 161, 1069.
14. Gershon-Cohen, J., Hermel, M. B., and Berger, S. M.: Ibid., 1961, 176, 1114.
15. Egan, L. L.: Radiology, 1960, 75, 894.

Reappraisal of Colonic Polyp—Castro

(Continued from page 17)

8. Enterline, H. T., and others: J.A.M.A., 1962, 179, 322.
9. Cook, G. B., and Margulis, A. R.: Paper presented at the meeting of the American College of Surgeons in Chicago, October, 1961.
10. Deddish, M. R., and Hertz, R. E.: Surg. Clin. N. Amer., 1957, 37, 1287.
11. Swinton, N., Weakly, F., and Kopple, M.: Paper presented at the meeting of the American Proctologic Society in Miami, Fla., May, 1962.

Head Injuries—Ommaya

(Continued from page 22)

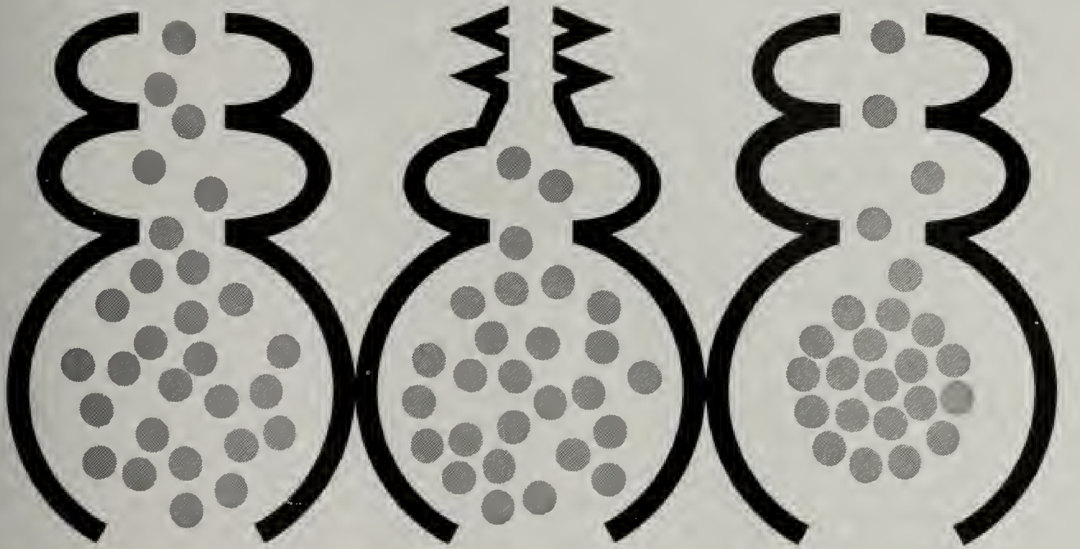
mentioned above that the management of head injuries involves a wide range of special facilities. Surgical neurology only begins the work which must be carried on by psychiatry, industrial medicine, and social counselors. Where the care of the head injury patient falls short of best standards is due to the usual inability to offer more than fragmented services from such different fields. The need for special centers for trauma and head injuries where such services could be integrated thus becomes obvious. In order to avoid wastage of manpower in the last World War such centers were established. It is paradoxical that now they do not exist for the majority of the population, and this in spite of the fact that more people are killed and maimed on the roads and elsewhere in one year than in all the years of the war.

Almost 400 years ago Ambroise Paré emphasized that in the widest sense the effect of injury is to decrease the energy of the body. The injured nervous system shows this most clearly. From the initial cancellation of energy in the unconscious state, through the low energy states of confusion and amnesia to the delayed difficulties of the post-traumatic syndromes, this poverty of energy output is the common thread run into the variegated responses to head injury. Our aim in the care of such patients from first to last is to understand how this output is decreased and how it may best be restored.

A Brief Annotated Bibliography

Potter, J. M.: The Practical Management of Head Injuries. London: Lloyd-Luke, 1961. An excellent little book of 70 pages containing the essentials of a sound approach to this problem.

Brock, S.: Injuries of the Brain and Spinal Cord, 4th ed. New York: Springer, 1960. A more comprehensive account of the subject, with references to original work in the field.



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Lomotil is supplied as unscored, uncoated white tablets of 2.5 mg. and as liquid containing 2.5 mg. in each 5 cc. A subtherapeutic amount of atropine sulfate (0.025 mg.) is added to each tablet and each 5 cc. of the liquid to discourage deliberate overdosage. Recommended dosage schedules should not be exceeded.

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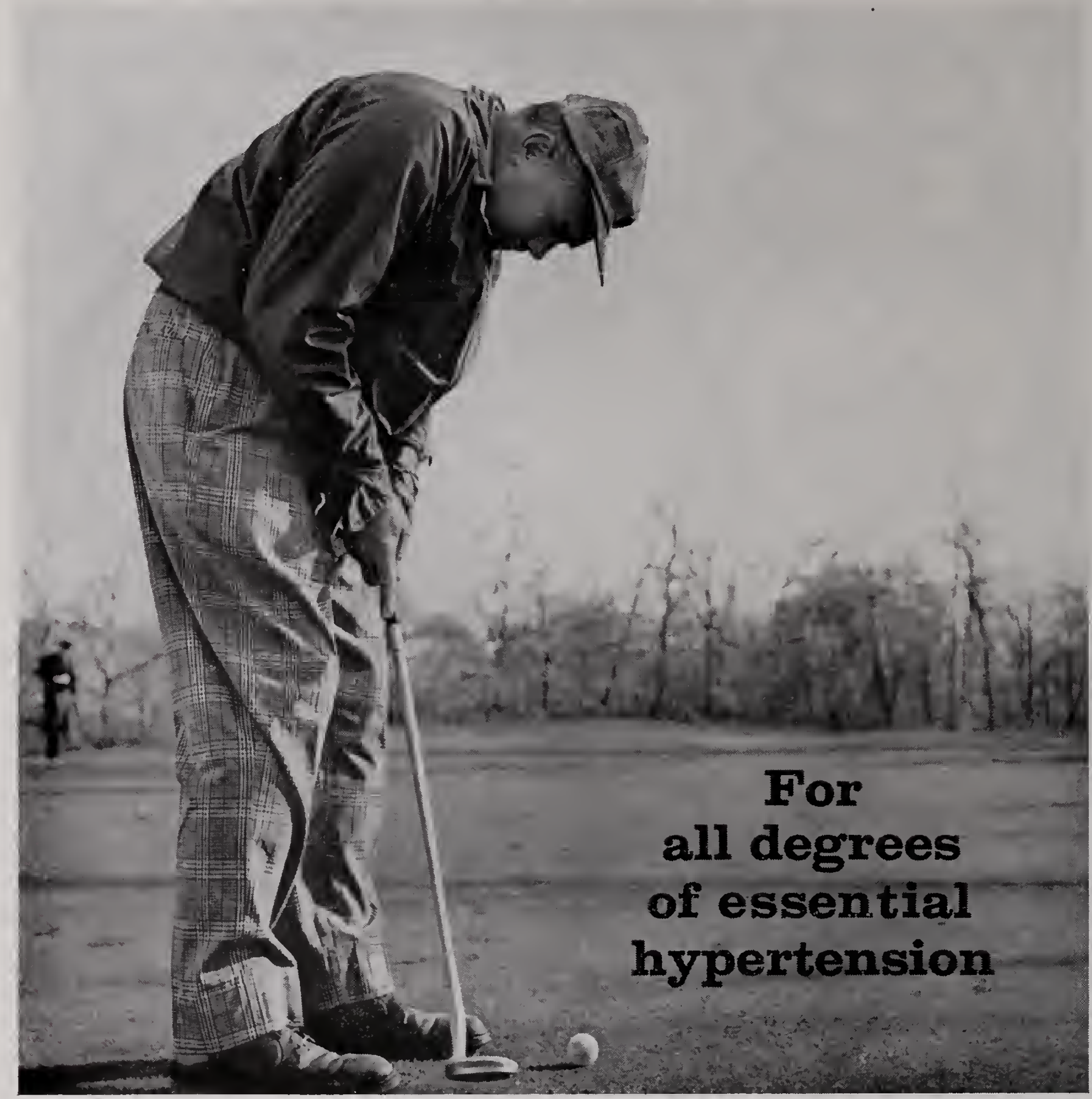
---

1. Janssen, P. A. J., and Jageneau, A. H.: A New Series of Potent Analgesics: Dextro 2:2-Diphenyl-3-Methyl-4-Morpholino-Butyrylpyrrolidine and Related Amides. I. Chemical Structure and Pharmacological Activity, J. Pharm. Pharmacol. 9:381-400 (June) 1957.
2. Cayer, D., and Sohmer, M. F.: Long-Term Clinical Studies with a New Constipating Drug, Diphenoxylate Hydrochloride, N. Carolina Med. J. 22:600-604 (Dec.) 1961.

G. D. SEARLE & CO. *Research in the Service of Medicine*



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†Hutchison J. C.: Current Therap. Res. *2*:487 (Oct.) 1960.

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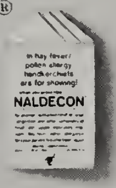

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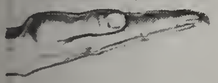

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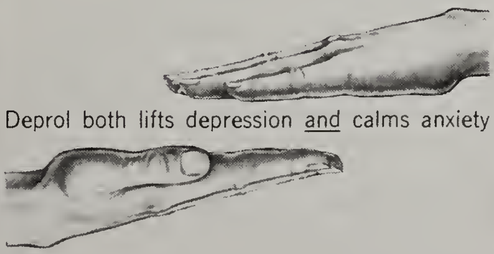

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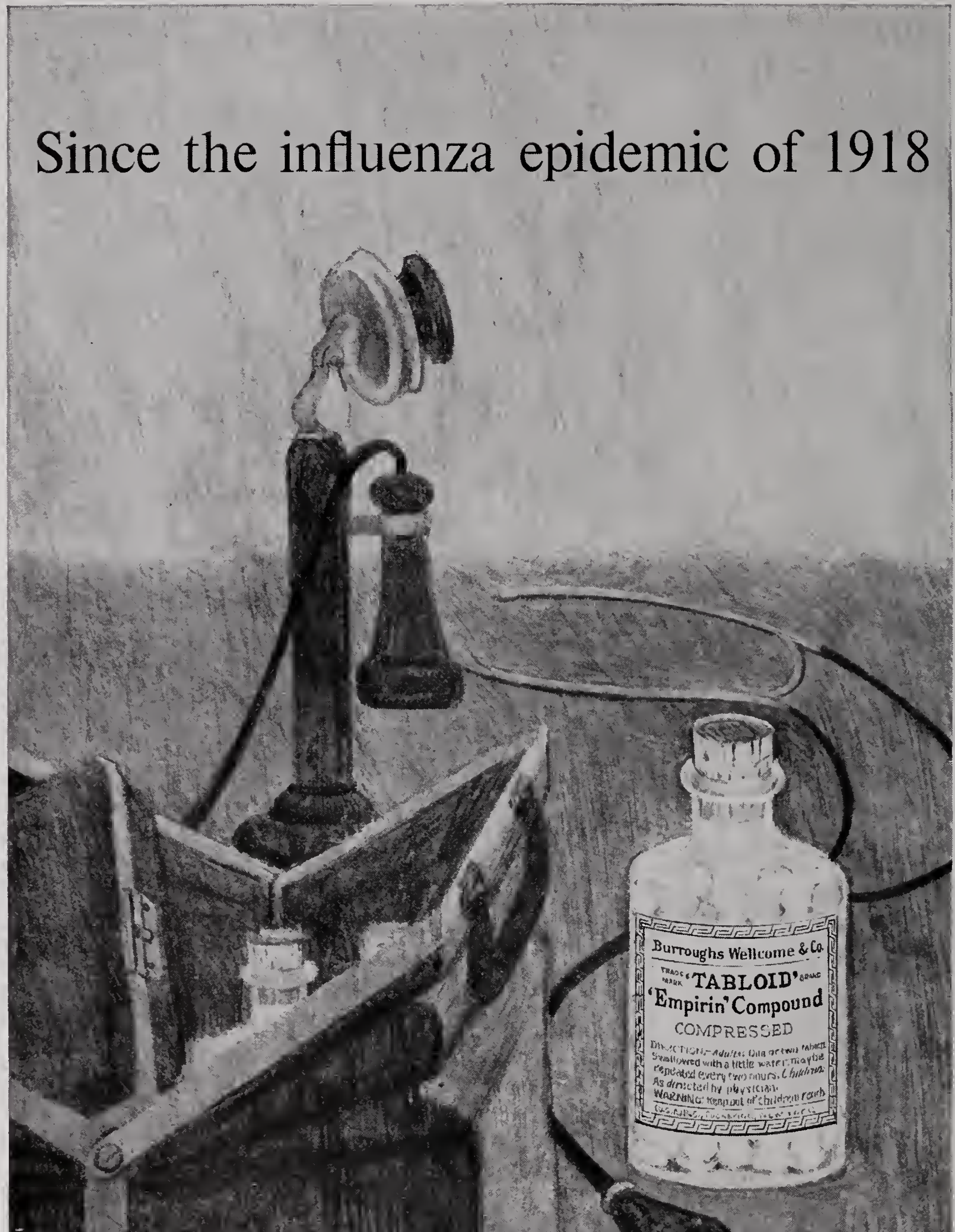
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February 6–9: American College of Radiology. Drake Hotel, Chicago. Address: Mr. William C. Stronach, *Executive Director*, 20 North Wacker Drive, Chicago, Ill.

Feb. 11–13: Sectional Meeting, American College of Surgeons. Queen Charlotte Hotel, Charlotte, N. C. Address: A.C.S., 40 East Erie Street, Chicago 11, Ill.

March 6–9: American Orthopsychiatric Association, Inc. Shoreham Hotel, Washington. Address: Marion F. Langer, Executive Secretary, 1790 Broadway, New York 19, N. Y.

March 17–22: American College of Allergists. The Americana, New York. Address: Dr. D. Joseph Parsons, *Secretary*, 1405 East High Street, Springfield, Ohio.

March 18–21: Industrial Medical Association. Sheraton-Park Hotel, Washington. Address: Mr. Clark D. Bridges, Managing Director, 55 East Washington Street, Chicago 2, Ill.

March 18–21: Southeastern Surgical Congress. Americana Hotel, Miami Beach, Fla. Address: Dr. A. H. Letton, *Executive Secretary*, 340 Boulevard, N.E., Atlanta 12, Ga.

March 27–29: Annual Congress, American College of Allergists. The Americana, New York. Address: Eloi Bauers, *Executive Vice President*, 2160 Rand Tower, Minneapolis 2, Minn.

March 29–31: American Society of Internal Medicine. Brown Palace Hotel, Denver. Address: Mr. Albert V. Whitehall, *Executive Director*, 3410 Geary Blvd., San Francisco 18, Calif.

March 29–April 5: American Academy of General Practice. Chicago. Address: Mr. Mac F. Cahal, *Executive Director*, Volker Boulevard at Brookside, Kansas City 12, Mo.

April 1–5: Annual Spring Congress in Ophthalmology and Otolaryngology. Gill Memorial Eye, Ear and Throat Hospital, Roanoke, Va. Address: Superintendent, P. O. Box 1789, Roanoke, Va.

April 9–11: American Association of Anatomists. Washington, D. C. Address: Dr. L. B. Flexner, Secretary, School of Medicine, University of Pennsylvania, Philadelphia, Pa.

April 17–20: West Virginia Academy of Ophthalmology and Otolaryngology. Greenbrier Hotel, White Sulphur Springs, West Va. Address: Dr. Worthy W. McKinney, *Secretary*, Professional Park, Beckley, West Va.

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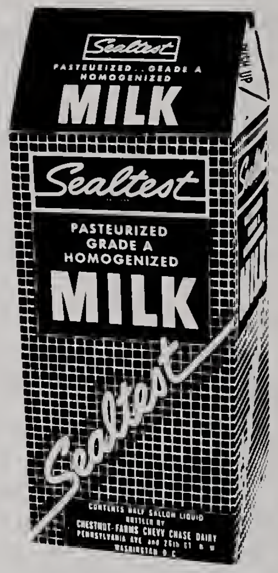
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*Levin, S. J.: **Pediat. Clin. North America 1:975, Nov., 1954.**

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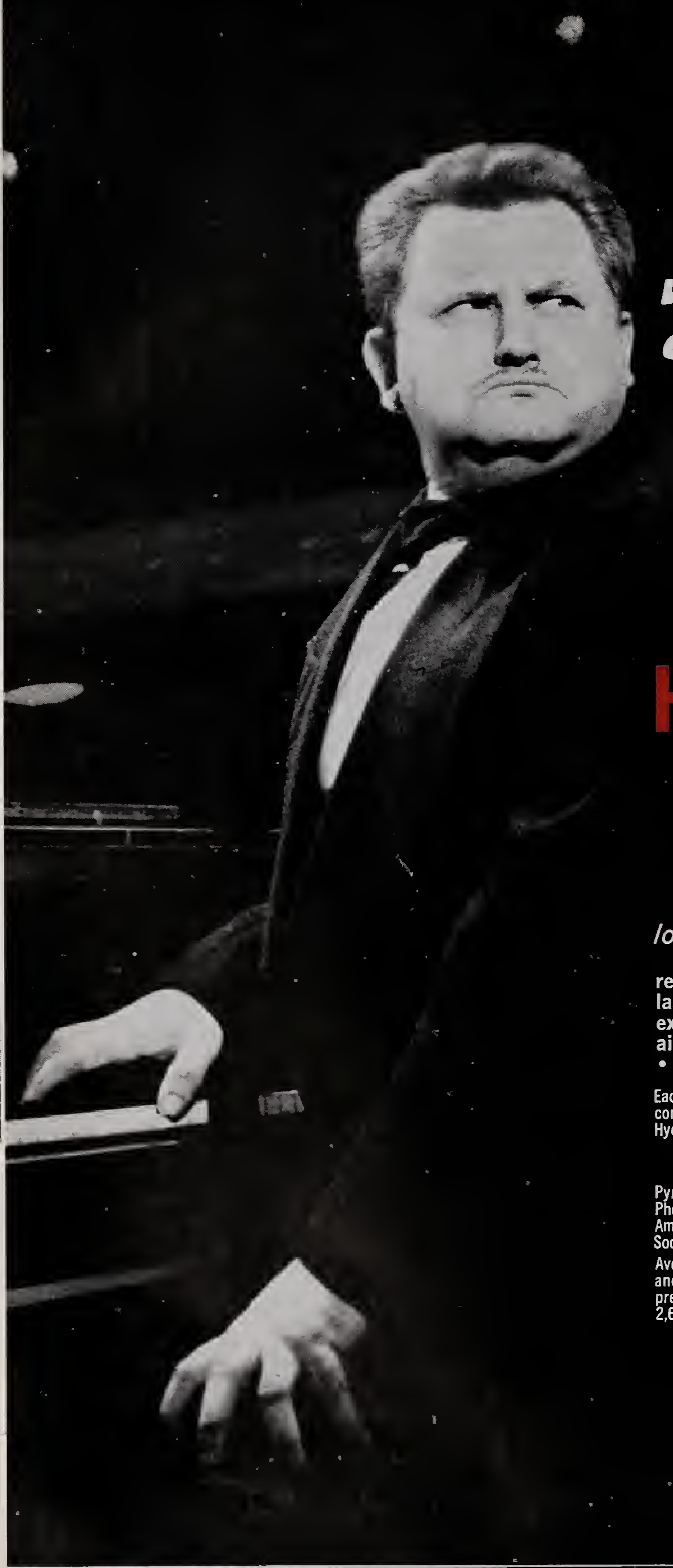

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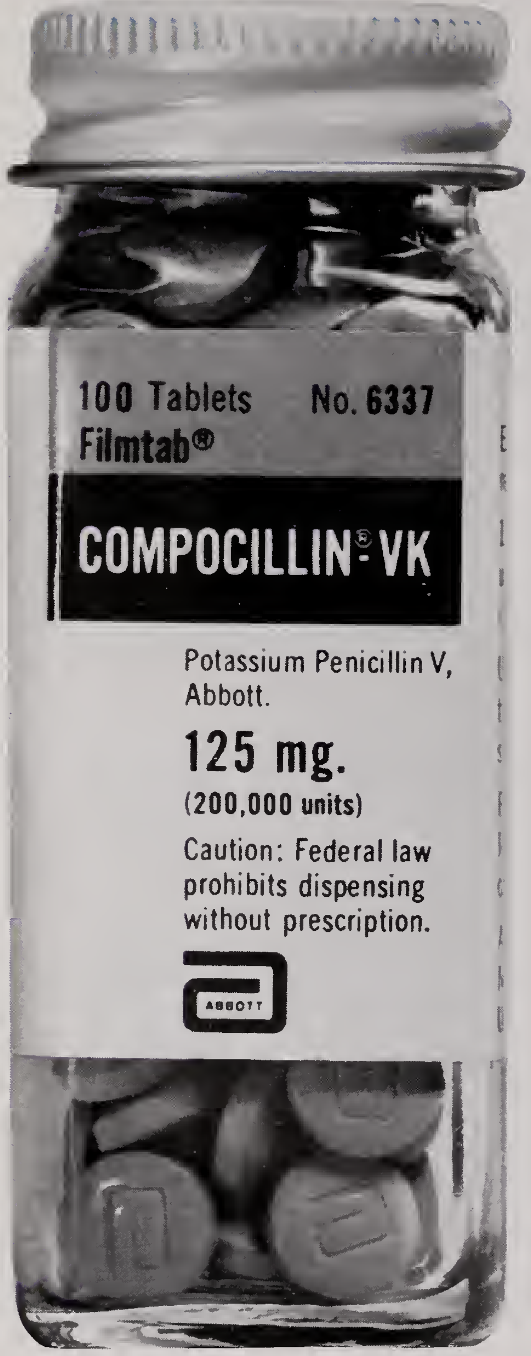
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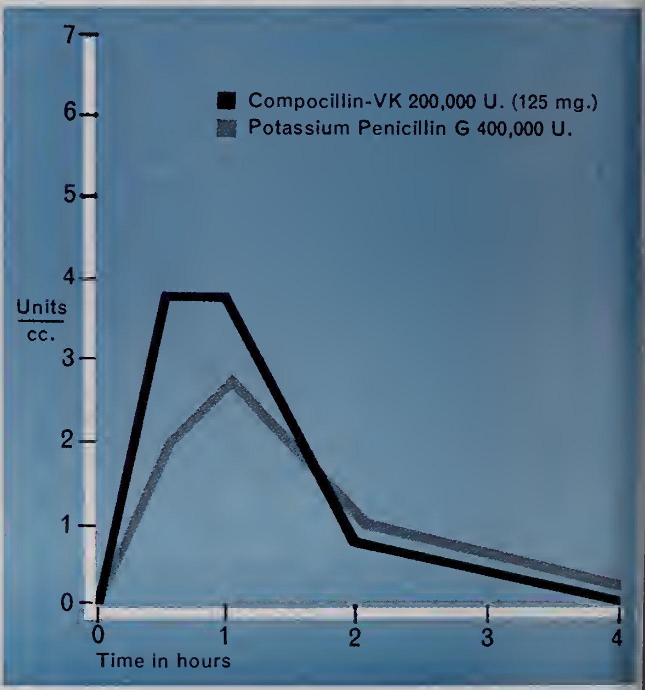

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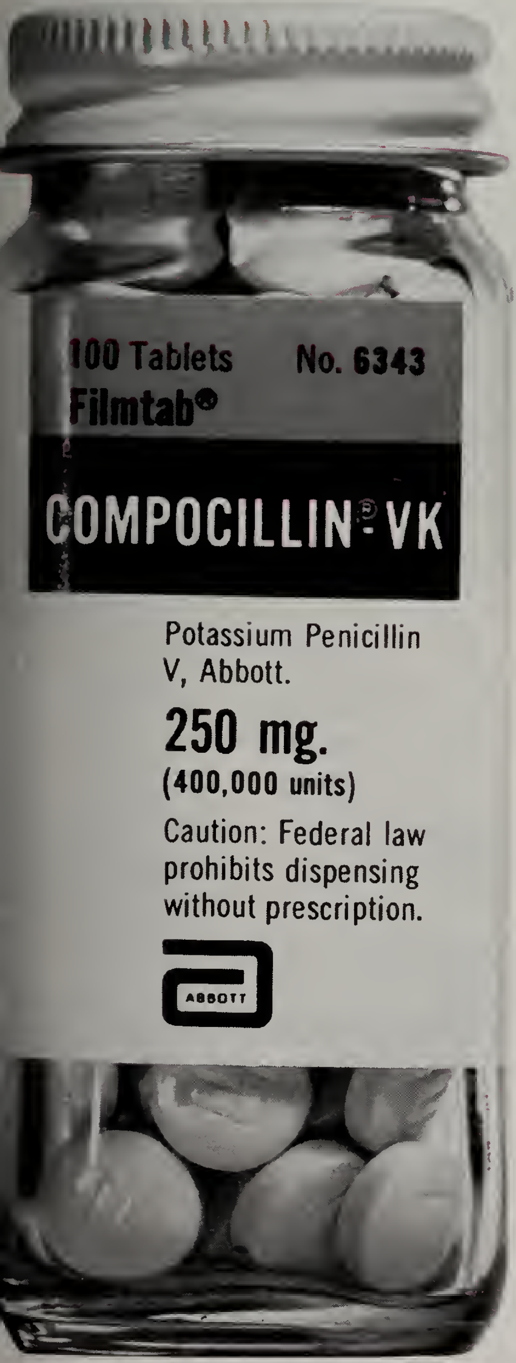
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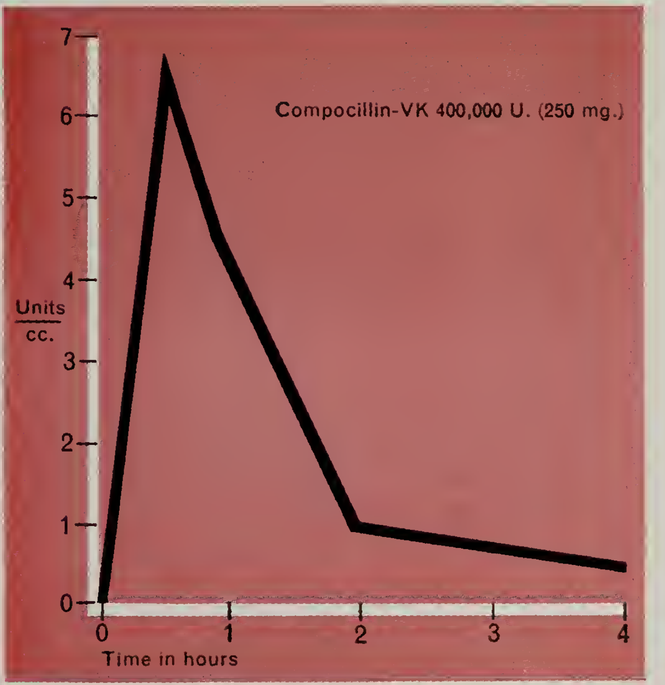

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*Chart data from two separate studies completed by the Microbiologic and Medical Departments of Abbott Laboratories.

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BOOKS RECEIVED

Acknowledgment is made of the following books which have recently been received.

Synopsis of Genitourinary Disease, 7th ed. Austin I. Dodson, Jr., M.D., and J. Edward Hill, M.D. Price, $7.75. Pp. 384, with 123 illustrations. St. Louis: Mosby, 1962.

Carcinoma of the Cervix. John B. Graham, M.D. Price, $14.00. Pp. 487, illustrated. Philadelphia: Saunders, 1962.

Postpartum Psychiatric Problems. James Alexander Hamilton, Ph.D., M.D. Price, $6.85. Pp. 156. St. Louis: Mosby, 1962.

Atlas of Clinical Endocrinology, including text of diagnosis and treatment, 2nd ed. H. Lisser, A.B., M.D., and Roberto F. Escamilla, A.B., M.D. Price, $23.00. Pp. 489, with 165 plates, including 3 in color. St. Louis: Mosby, 1962.

Synopsis of Roentgen Signs. Isadore Meschan, M.A., M.D., with the assistance of R. M. F. Farrer-Meschan, M.B., B.S. (Melbourne, Australia), M.D. Price, $11.00. Pp. 436, with 1,488 illustrations on 465 figures. Philadelphia: Saunders, 1962.

Ciba Foundation Symposium on Pulmonary Structure and Function. A. V. S. De Reuck, M.Sc., D.I.C., A.R.C.S., and Maeve O'Connor, B.A., Editors for the Ciba Foundation. Price, $11.50. Pp. 403, with 103 illustrations. Boston: Little, 1962.

Bedside Diagnosis, 6th ed. Charles Seward, M.D., F.R.C.P. (Edin.). Price, $7.00. Pp. 499, illustrated. Baltimore: Williams & Wilkins, 1962.

Doctor and Patient and the Law, 4th ed. C. Joseph Stetler, LL.B., LL.M., and Alan R. Moritz, A.M., Sc.D., M.D. Price, $14.75. Pp. 529. St. Louis: Mosby, 1962.

Office Procedures, 2nd ed. Paul Williamson, M.D. Price, $13.50. Pp. 448. New illustrations by Ann Williamson. Philadelphia: Saunders, 1962.

Ciba Foundation Colloquia on Endocrinology: Volume 14. Immunoassay of Hormones. G. E. W. Wolstenholme, O.B.E., M.A., M.B., M.R.C.P., and Margaret P. Cameron, M.A., Editors for the Ciba Foundation. Price, $10.75. Pp. 419, with 85 illustrations. Boston: Little, 1962.

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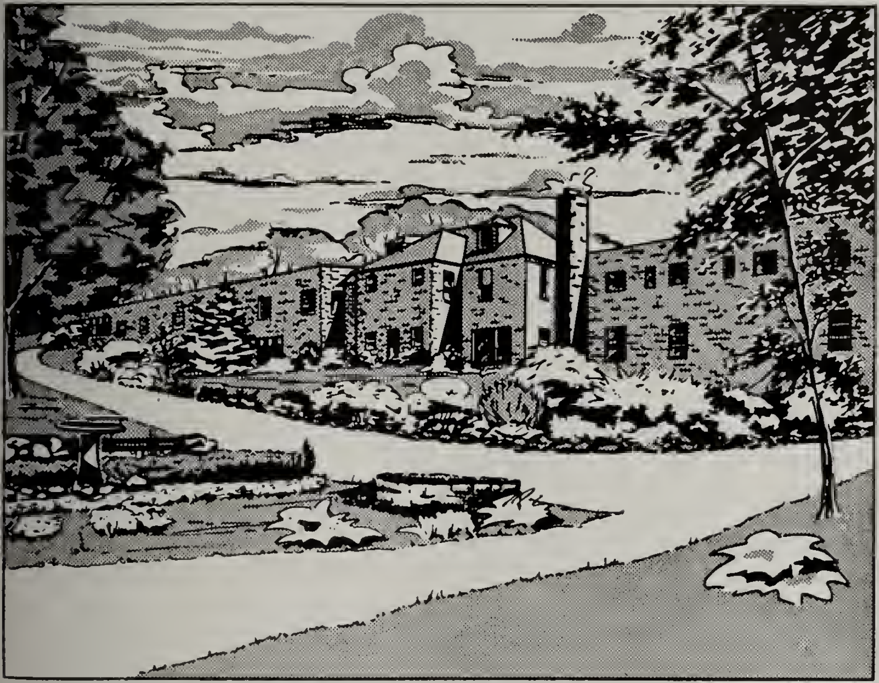

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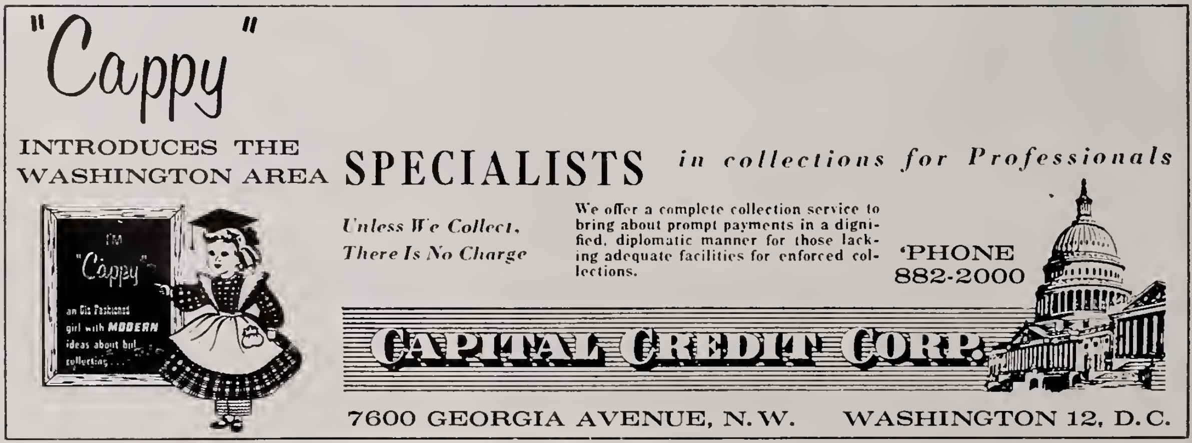
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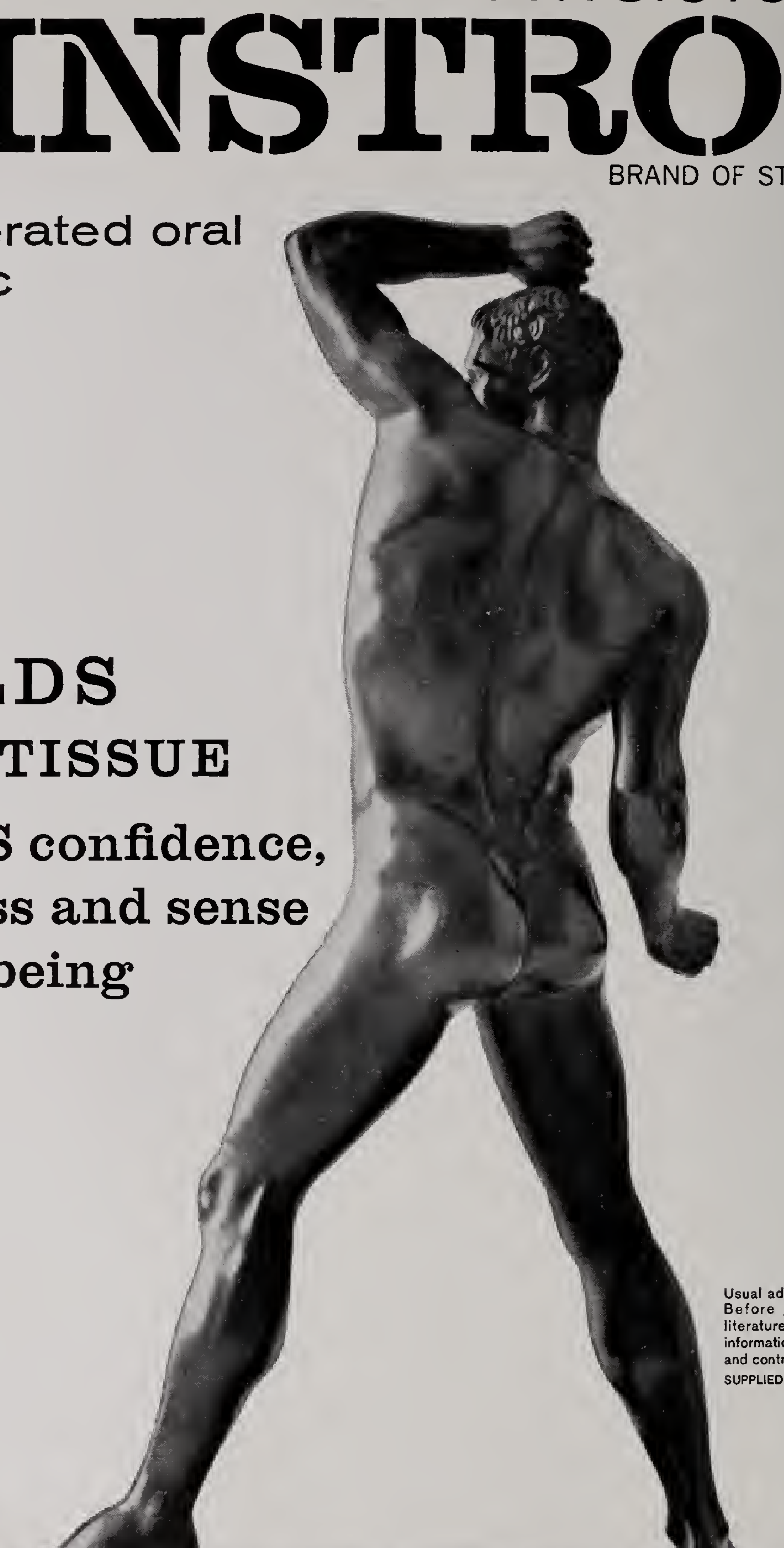

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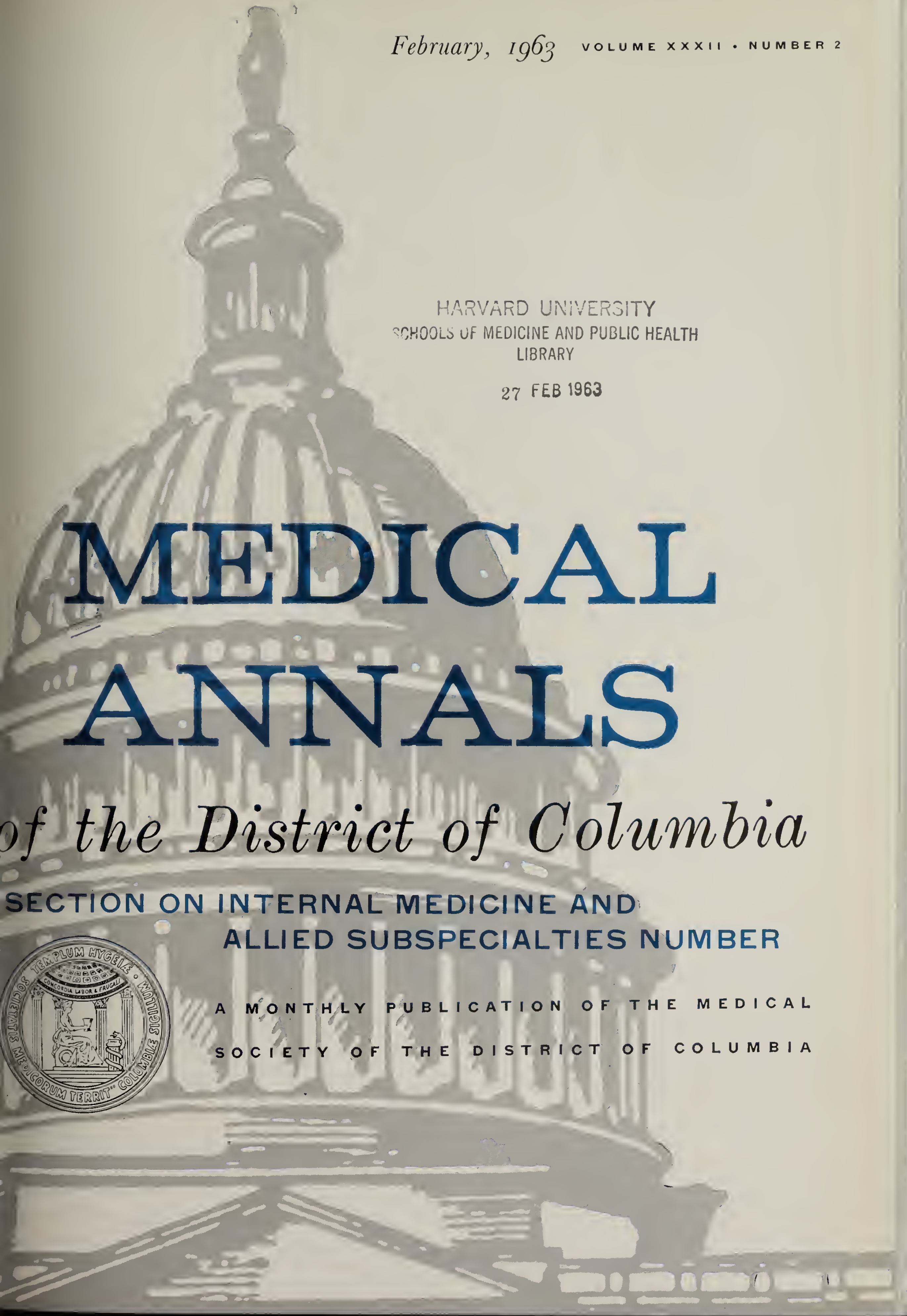

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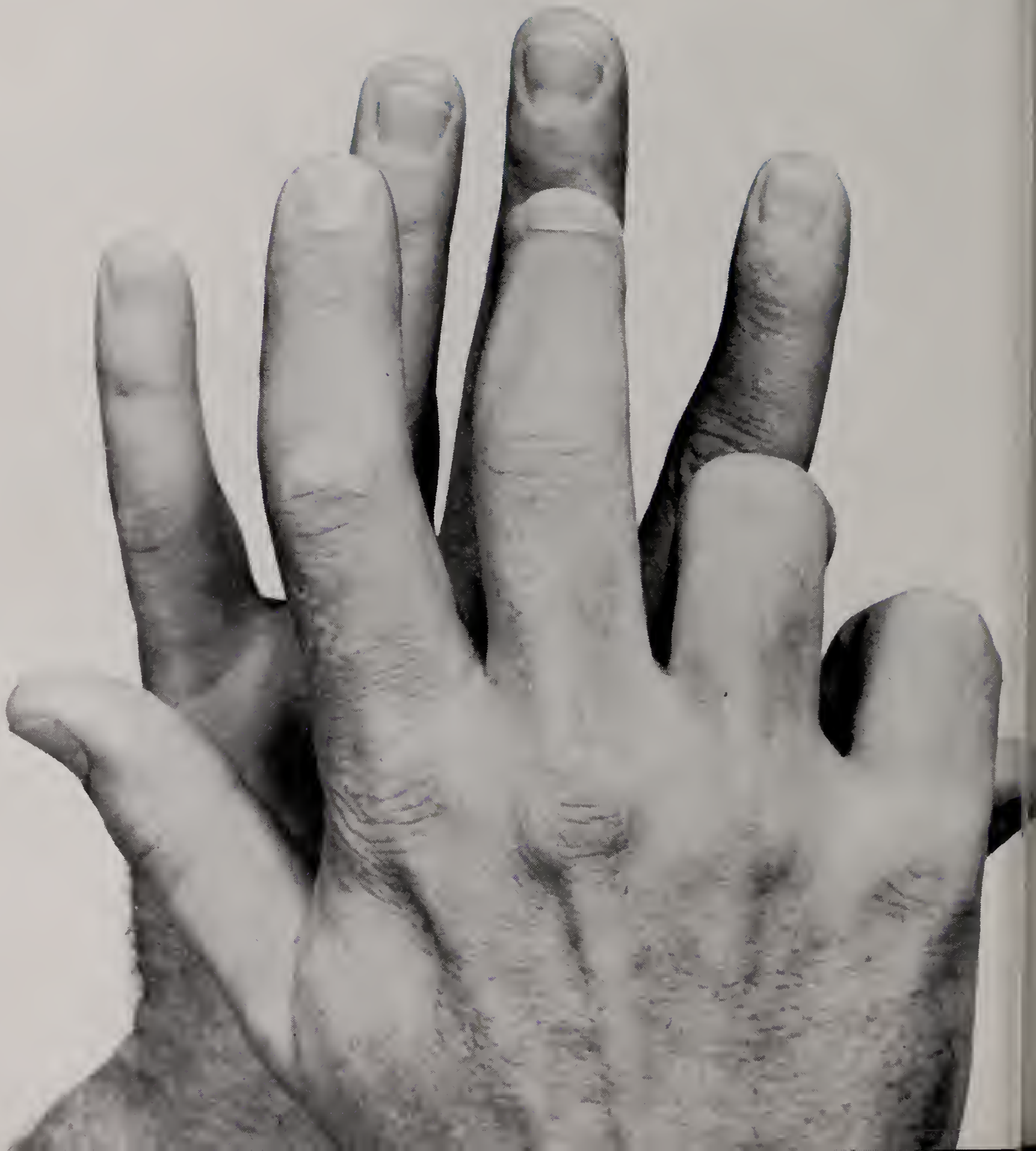

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References: (1) Thacher, H. C., & Fishman, L.: *J. Maine M. A.* **52**:84, 1961. (2) Hopkins, E. W.: *Postgrad. Med.* **29**:451, 1961. (3) Hall, W. H.: *M. Clin. North America* **43**:191, 1959. (4) Krugman, S.: *Pediat. Clin. North America* **8**:1199, 1961. (5) Ede, S.; Davis, G. M., & Holmes, F. H.: *J.A.M.A.* **170**:638, 1959. (6) Wolfsohn, A. W.: *Connecticut Med.* **22**:769, 1958. (7) Calvy, G. L.: *New England J. Med.* **259**:532, 1958. (8) Hendren, W. H., III, & Haggerty, R. J.: *J.A.M.A.* **168**:6, 1958. (9) Cutts, M.: *Rhode Island M. J.* **43**:388, 1960. (10) Berman, W. E., & Holtzman, A. E.: *California Med.* **92**:339, 1960. (11) Vetto, R. R.: *J.A.M.A.* **173**:990, 1960. (12) Sia, C. C. J., & Brainard, S. C.: *Hawaii M. J.* **17**:339, 1958. (13) Rosenthal, I. M.: *GP* **17**:77 (March) 1958. (14) Gaisford, W.: *Brit. M. J.* **1**:230, 1959.

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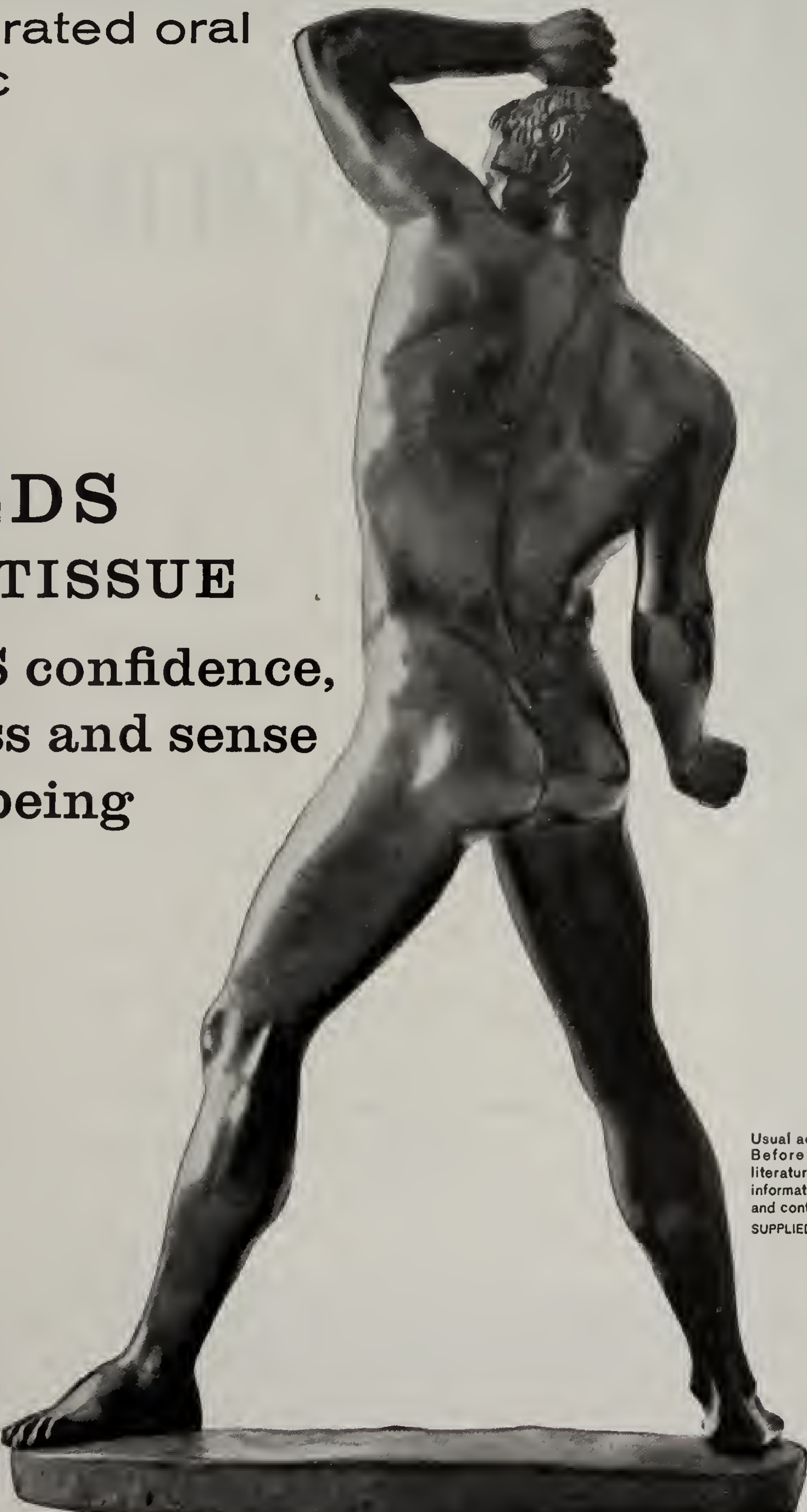

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1. Ford, R. A., and Blanchard, K. P.: J.-Lancet 78:185, 1958.

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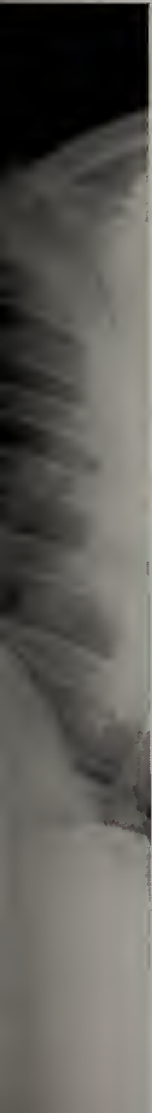

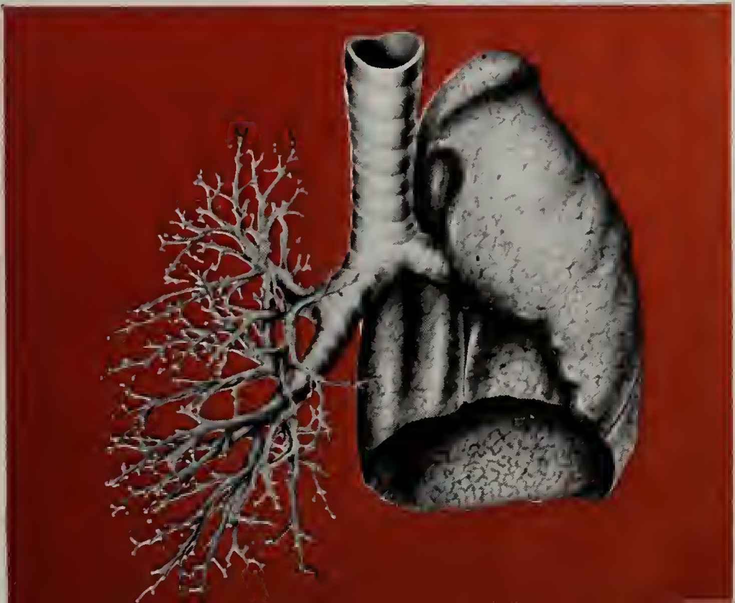

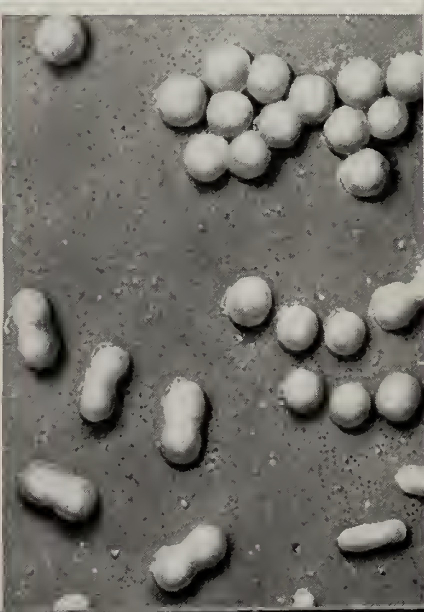

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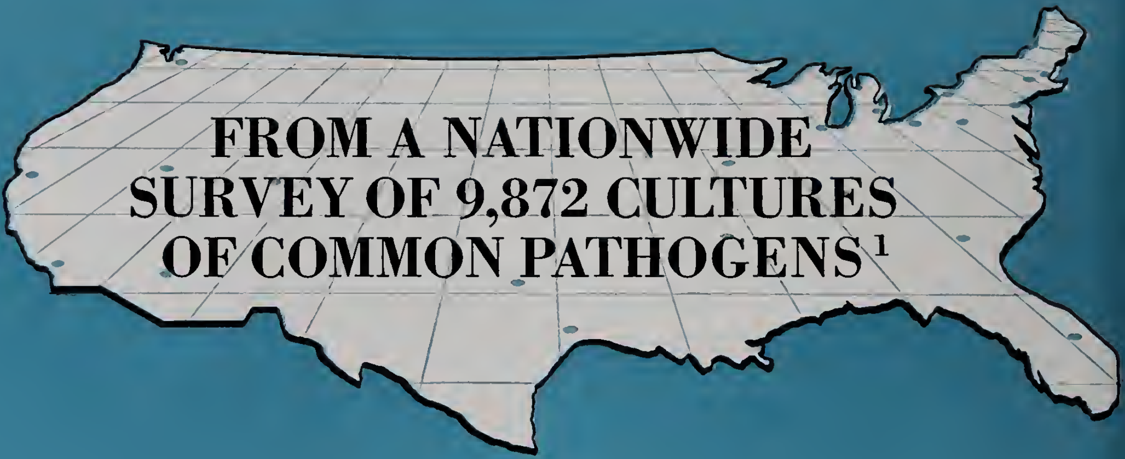

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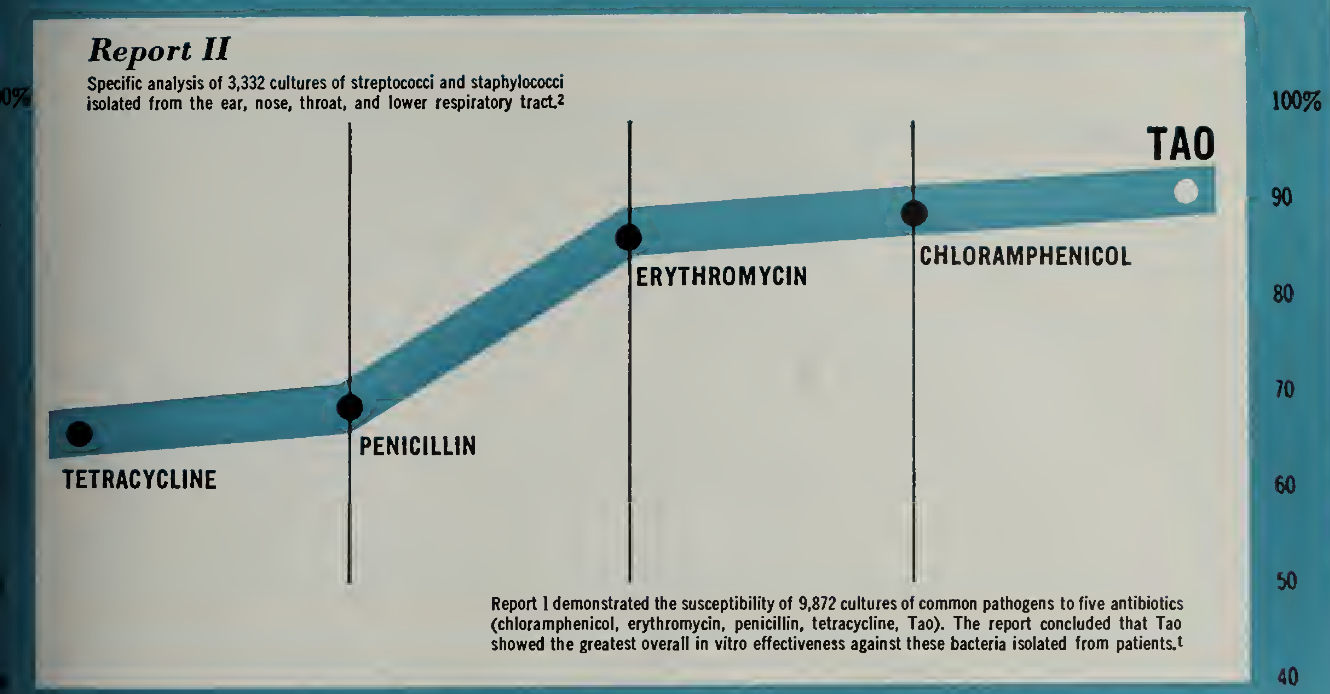
3. **Tao has been used for five years with development of predictable cross resista** In 1958 and 1961, approximately 73% and 7 respectively, of erythromycin-resistant prob staphylococci showed susceptibility to Tao.[3,4] present study confirms the continuing high de of Tao activity even against these pathogens 1,592 cultures of erythromycin-resistant sta lococci, 68% were susceptible to Tao, while in reverse situation, only 33% of 768 Tao-resist staphylococci were susceptible to erythromy



Report II

Specific analysis of 3,332 cultures of streptococci and staphylococci isolated from the ear, nose, throat, and lower respiratory tract.[2]

Report I demonstrated the susceptibility of 9,872 cultures of common pathogens to five antibiotics (chloramphenicol, erythromycin, penicillin, tetracycline, Tao). The report concluded that Tao showed the greatest overall in vitro effectiveness against these bacteria isolated from patients.[1]

Report II

Results of Bacterial Susceptibility in 3,332 Respiratory Pathogens

References

1. "Bacterial Susceptibility Patterns: A Geographic Survey." Fowler, J. Ralph, M.D., and Watters, John L., M.D. Scientific Exhibit presented at the Annual Meeting of the American Society of Clinical Pathologists, Chicago, Ill., August 31 to September 9, 1962. 2. Fowler, J. Ralph, Watters, John L. and Levy, Arthur M.: Bacterial Susceptibility Patterns as Related to Geographic Variation and Anatomical Source. In press. 3. English, A. R., and Fink, F. C.: Antibiot. & Chemother. 8:420 (Aug.) 1958. 4. English, A. R., and Fink, F. C.: Antibiot. and Chemother. 11:648 (Oct.) 1961.

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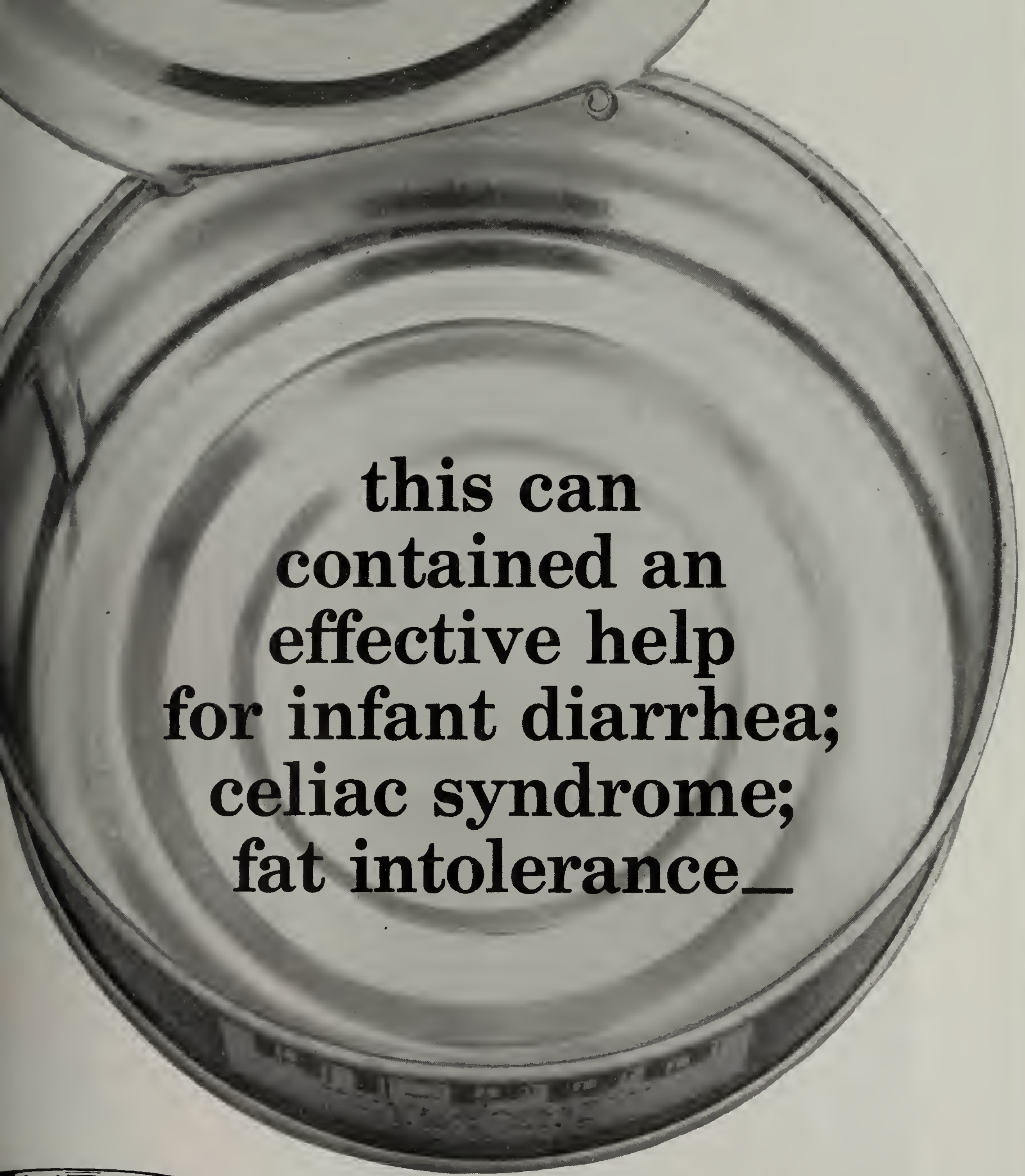

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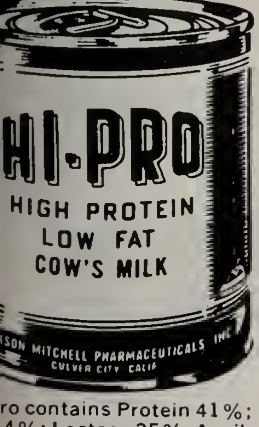
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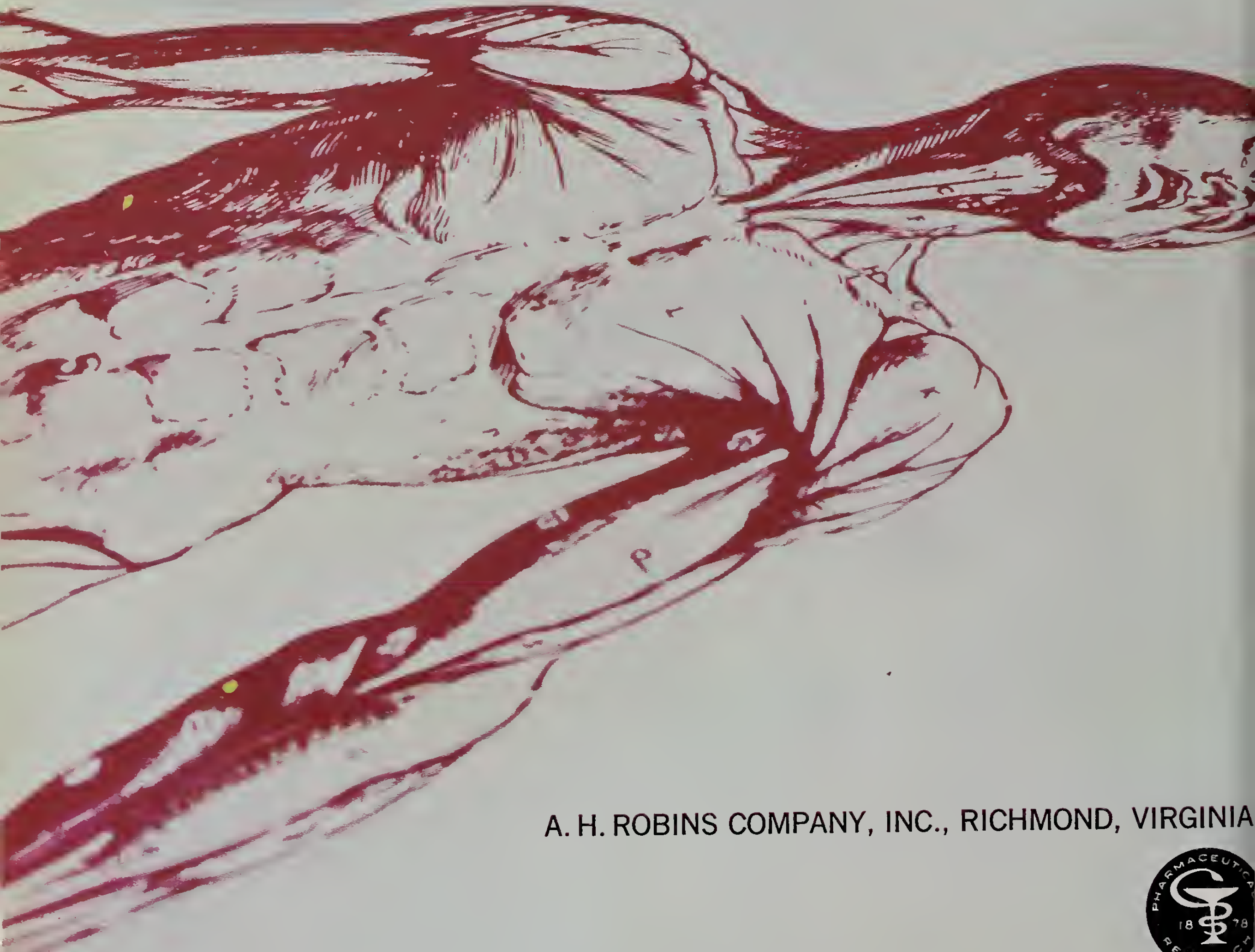

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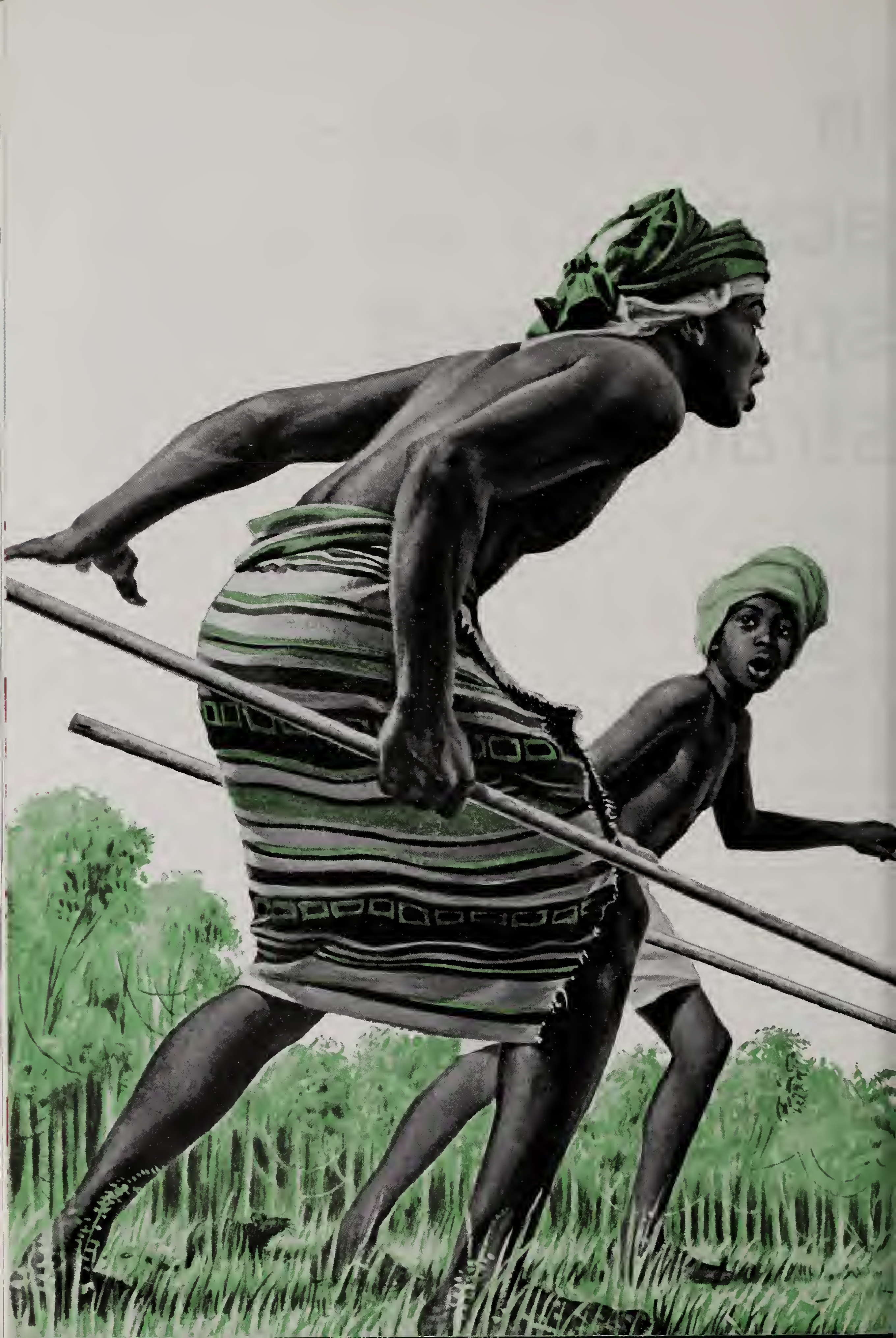

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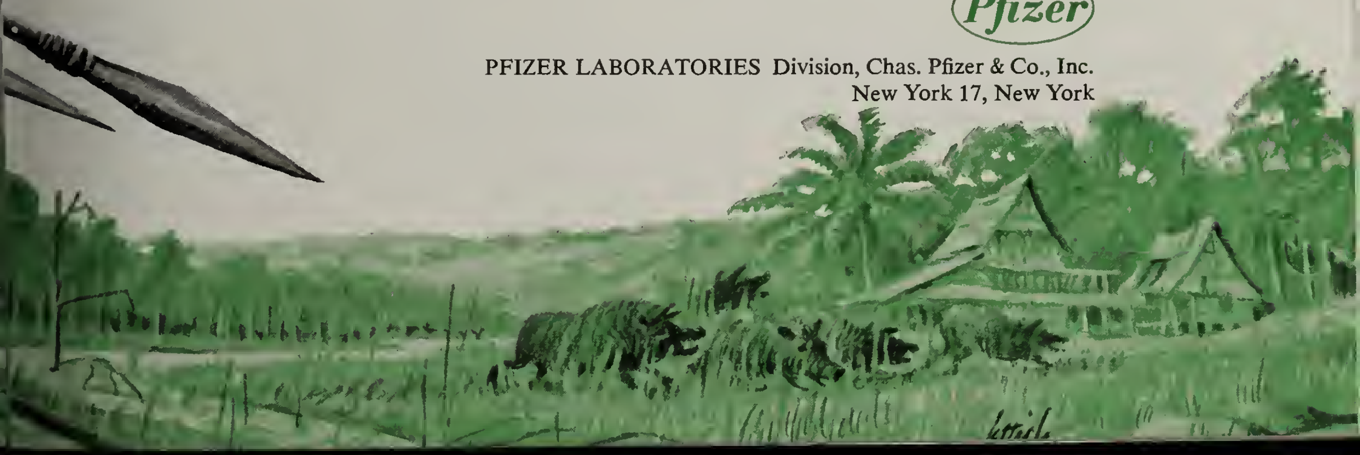

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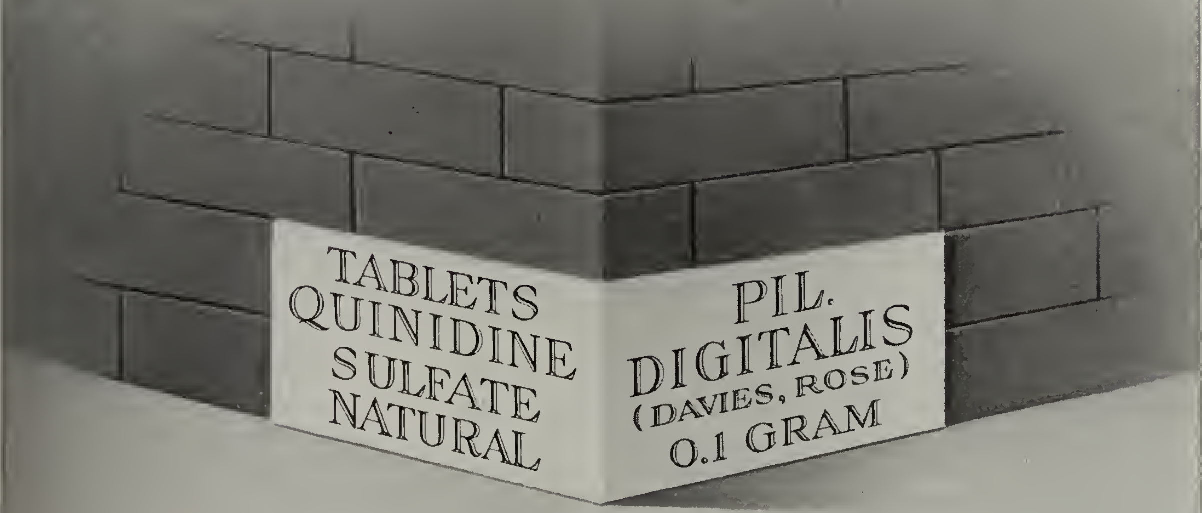

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BOOK REVIEWS

Medical Department, United States Army: Internal Medicine in World War II. Volume I. Activities of Medical Consultants. Colonel John Boyd Coates, Jr., M.C., Editor-in-Chief; W. Paul Havens, Jr., M.D., Editor for Internal Medicine. Prepared and published under the direction of Lt. General Leonard D. Heaton, The Surgeon General, United States Army. Price, $7.50. Pp. 880, with 277 illustrations. Washington 25, D.C.: Superintendent of Documents, U.S. Government Printing Office, 1961.

This is the seventeenth volume to be published in the total series concerned with the history of the U.S. Army Medical Department in World War II, and the first of a series of 3 volumes to be published on Internal Medicine. This new book, edited by W. Paul Havens Jr., M.D., offers a compilation of data gathered by 13 consultants in different theaters of war, and deals with the contribution, activities and accomplishments of the consulting services established during World War II in the office of the Surgeon General.

The consultant system had a very slow start, and it was only the visionary and positive attitude of its chief, Brig. General Hugh J. Morgan, that it got off the ground at all. Even when malaria was incapacitating thousands upon thousands of troops, it was 8 months after the request was made before a consultant in tropical medicine was appointed to the office of the Surgeon General. These and many other failings of the system are documented in this book, primarily to make sure that they are not repeated in any future contingency.

To the men in the field the visits of the medical consultants were too infrequent, and we found the consultants more preoccupied with evacuation and personnel problems than concerned with actual clinical problems. The problems of all the new and exotic diseases encountered by newly recruited civilian physicians were usually not solved by the consultants but by the latest T.B. MED publications, which were directly under the consultants' supervision.

This volume has much in it of value for peacetime medicine since it evaluates clinical material, clinical experiences, and policies that dealt with such large numbers of men that it can be a guide in handling similar problems in future disasters. It is amply illustrated with charts, maps, and pictures of the men, the hospitals, and the techniques which were responsible for the care of the sick and injured soldiers and which helped them receive the highest level of medical care.

Internal medicine made amazing progress during World War II. The use of penicillin, the new antimalarial drugs, the rehabilitation of the physically disabled, the control of typhus with DDT, and many other triumphs can all be found in this book, but not in chronological order. Since this is only the first of 3 volumes, it is hoped that the next 2 will deal with specific diseases in the big panorama of World War II, the problems of diagnosis and treatment, and the importance of the internist in the field as well as in the general hospital.

This book no doubt will serve as background for study in service schools and in all components of the Army, as well as a ready reference for unit and staff personnel. It will also be of interest to the physician, resident, intern or medical student, and all others who have now or will have in the future responsibility for the preservation of the national and international health (through the Peace Corps, Medico, etc.).

Bernard E. Nunez, M.D.

Gynecology and Obstetrics. John William Huffman, M.D. Price, $28.00. Pp. 1190, with 536 illustrations. Philadelphia: Saunders, 1962.

This book is written to review the female reproductive system in the light of a sequence of time, and to put the phenomenon of pregnancy in its proper place in this sequence. Thus, Gynecology and Obstetrics are "wedded in an indissoluble union."

This plan is quite logical, and I am sure it will lead the student to a clearer understanding of the development, function, dysfunction and decline of the woman. Dr. Huffman does this well, but it is shocking to the reader of the conventional book plan to find a chapter on Gynecology preceding a chapter on Obstetrics with no warning of the change. I must say that it made me uneasy.

The amount of material presented here is remarkable for its length and breadth. Dr. Huffman in his preface warns the reader of the book's lack of height and depth. I agree that a text cannot teach surgery and delivery technique, but I believe that their almost complete omission makes for a monochromatic presentation.

Dr. Huffman has not made use of the history and heritage of our arts to enliven his book. This surprised me as his prefatory note mentions the history of textbook writing and he is very conscious of time relations in his subject.

The illustrations are excellent and clear and well placed in the text. The photomicrographs are singular. The printing is excellent, and the book as a whole is beautiful.

The chapters on anatomy, physiology, histology and the newborn are well written and broad in their appeal. Very little space is devoted to the premenopause, menopause, and geriatric gynecology.

There may be a tendency for this plan of presentation to be repetitious. For example, pelvic measurements are discussed to an unnecessary extent in chapters 6, 14, and 27. There is a tendency for dichotomy to occur in the chapters on pregnancy. Chapter 19 is concerned with "The Puerperium," and chapter 32 is devoted to "Disorders of the Puerperium," and the reader is advised that "puerperal infection is

(Continued on page 30)

Bockus — Gastroenterology
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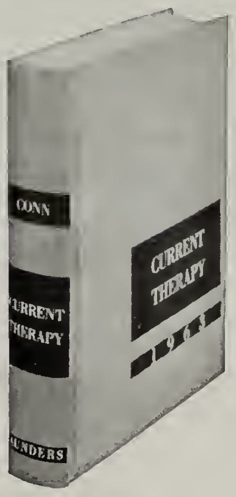

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Book Reviews

(Continued from page 28)

discussed with other diseases of the uterus and adnexa in chapter 37." This splitting would seem an unnecessary complication. (I am forced to note that the discussion is in chapter 38.)

The student might be advised that the time sequence is not the only major one operating in medicine, but that cause and effect can be sequential and logical. Dr. Huffman has not failed to weave this in. Although the title contains both Obstetrics and Gynecology, the author is stingy with the use of "obstetrics" in his text. Could it be that he now thinks it is time to wean the profession from a derivation of the Latin word for midwife. After all, gynecology could serve for the whole business.

BARTON W. RICHWINE, M.D.

Ciba Foundation Symposium, jointly with Coördinating Committee for Symposia on Drug Action on Enzymes and Drug Action. J. L. MONGAR, PH.D., Editor for the Coördinating Committee, AND A. V. S. DEREUCK, M.SC., D.I.C., Editor for the Ciba Foundation. Price, $12.50. Pp. 556, with 90 illustrations. Boston: Little, 1962.

In this Symposium, 71 international authorities discuss some of the many growing points and evolving concepts of biochemistry which are most likely to be of importance for future advances in pharmacology. The basic discussions have to do with enzymes as primary points of drug action and consider in general what one can do with enzyme systems to bring about changes in their activities, which in turn may be followed by physiologic changes.

A story is told about a well-known successful practicing engineer who looked at the homework assignment of his son, a second-year engineering student at college, and discovered that he could not understand what they were talking about. This story illustrates the rapid advances in scientific fields, and many well-trained physicians upon reading this book will feel in sympathy with this father. Nevertheless, in spite of the weak foundations in biochemistry that most physicians have, there are many chapters in this Symposium that will hold interest and stimulation for various specialists.

The discussion on carbonic anhydrase and its importance in kidney and brain function can make interesting reading for some physicians. The practical value of these studies, leading to the use of acetazolamide (Diamox®) in clinical medicine, is a point that all physicians can understand. The discussions on the mode of action of chlorothiazide (Diuril®) and the function of the renal nephron should stimulate some individuals.

The explanation of some of the actions of insulin, digitalis, barbiturates, chlorpromazine, the antihistamines and the anticonvulsants, while hard reading for the average physician, will certainly open his eyes to new vistas and may stimulate him to review his basic sciences.

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Tells you from what sources anxiety in a patient may spring and how it can be resolved.

The discussion on drug tolerance and the genetics of drug sensitivity are both spheres of active interest today. The chapter on "Drug Metabolism—Subcellular Mechanisms," by Dr. B. B. Brodie, from our own NIH, is particularly lucid and informative.

This Symposium celebrates the intermingling of the ideas of chemistry, physiology, and pharmacology by examining the relationship between drugs, enzymes and functions. It is an attempt to break the administrative barriers between these fields. While it remains difficult reading for the physician, it is an excellent reference for points of special interest by the diabetic specialist, the renal internist, the cardiologist, the neurologist, etc., and all those physicians who desire to understand some of the fundamental aspects of drug action.

ALVIN SELTZER, M.D.

Ionizing Radiation; an Old Hazard in a New Era. GEORGE TIEVSKY, M.D. Price, $8.00. Pp. 154, with 63 illustrations. Springfield, Ill.: Thomas, 1962.

Dr. Tievsky, of our medical community, presents in this monograph a sober appraisal of ionizing radiations from all sources, with some emphasis on the educated use of diagnostic X-rays. This material is a concise synthesis of a vast literature and contributions from authorities in the fields of genetics, health physics, radiobiology and nuclear medicine.

The physics of radiations usually disarms the average reader because of mathematic abstractions. This is distinctly avoided as is esoteric jargon. The data are presented in a very readable style with clear, simple, graphic illustrations. There is a convenient glossary of terms.

This monograph should appeal to students and to all physicians who use diagnostic X-rays, particularly those without formal education in radiology. It should prove a ready brief office reference to appease an inquisitive public.

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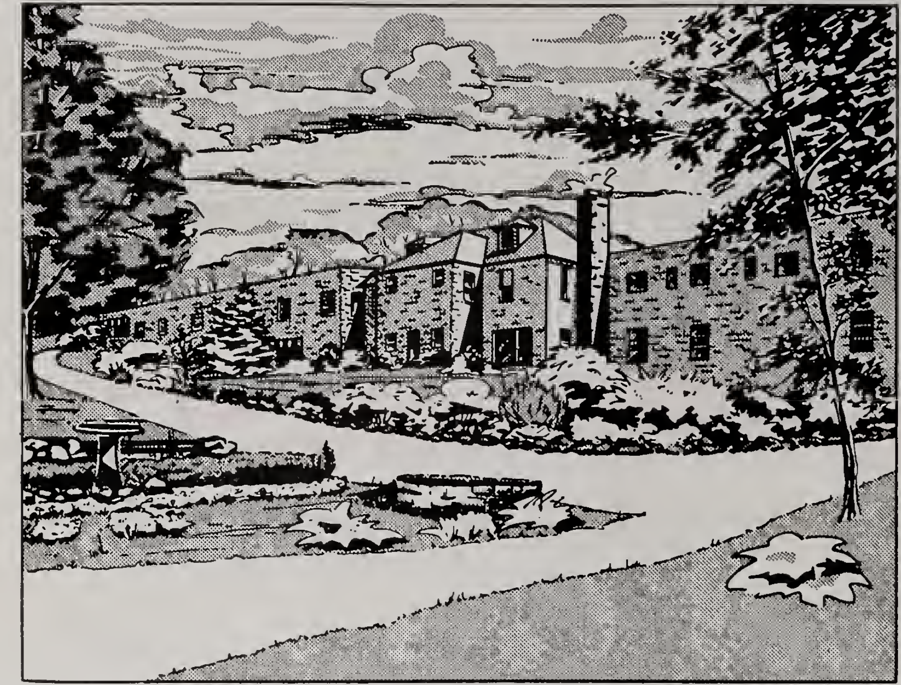

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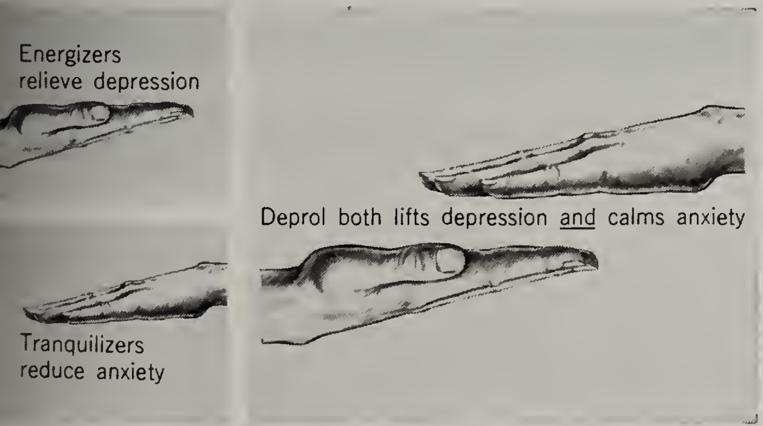
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Section on Internal Medicine and Allied Subspecialties Number

Foreword

The Section on Internal Medicine and Allied Subspecialties, newest component within our Medical Society, was organized in 1956. Formation of a local chapter of the American Society of Internal Medicine occurred simultaneously.

It may be true that rapidly changing socioeconomic conditions provided the main impetus to the creation of these two organizations. To the internist, however, greater cohesion within his professional group than ever before has become important and could mean the preservation of his style of medical practice, a way of life.

The internist is not unaware of his obligations and capabilities in regard to scientific medicine. This issue of the Medical Annals of the District of Columbia presents scientific accomplishments by fellow members and is sponsored by the Section on Internal Medicine.

Alban W. Eger, M.D., *Chairman*

Observations on Reiter's Syndrome*†‡

A Clinical Study of the Factors in Diagnosis and Treatment

RAYMOND SCALETTAR, M.D., F.A.C.P.

Washington

Reiter's syndrome is a multisystem disorder which is believed to be of infectious etiology. Classically, this syndrome is associated with a well-known triad of urethritis, arthritis and conjunctivitis. However, it is not uncommon for the conjunctivitis to be transient or absent. The latter cases are thought to be incomplete forms of this syndrome.

This disorder has a wide clinical spectrum, ranging from a short illness with prompt recovery to a more chronic disability, which tends to improve gradually over a period of 3 to 6 months. The failure to recognize this condition has resulted in improper diagnosis and treatment. Many of these patients are confused with rheumatoid arthritis despite the fact that the criteria for rheumatoid arthritis have not been satisfied. In the military or in industrial medicine where monetary compensation for illness is a constant problem, many of these patients have been compensated for rheumatoid arthritis when their problem has been that of Reiter's syndrome.

Although much has been written on Reiter's syndrome the overwhelming majority of articles on this subject have appeared in European literature. This probably signifies a greater appreciation by European physicians of the prevalence of this disorder and its manifestations. For these reasons I wish to describe our experience with Reiter's syndrome and to emphasize those features which differentiate it from other arthropathies.

---

* This work was accomplished during Dr. Scalettar's tenure as Chief of the Arthritis Clinic, Walter Reed General Hospital, Washington, D. C.

† Presented in abstract form at the Annual Meeting of the American Rheumatism Association, held in New York City, June 22–23, 1961.

‡ Presented at the Fourteenth Annual Regional Meeting of the American College of Physicians for the District of Columbia and Maryland in Washington, D. C., November 10, 1962.

Results

The group under study consisted of 47 men who were diagnosed as having Reiter's syndrome at the Walter Reed General Hospital between the years 1949 and 1959. Of these cases 42 had the classical triad of Reiter's syndrome. In the 5 remaining cases in which urethritis and arthritis were present but conjunctivitis was absent some other feature characteristic of Reiter's syndrome, such as balanitis circinata or keratodermia blennorrhagica, was usually present. More than 60 per cent of the cases occurred in the last 4 of this 11-year-study and were seen personally by me.

Although Reiter's syndrome may occur in women,[1] our series consisted entirely of male U. S. Army personnel. It is readily seen that 80 per cent of the cases occurred between the ages of 16 and 25, with the peak incidence between 21 and 25 years of age (figure 1). The predilection for this disorder to affect young men is in striking contrast to rheumatoid arthritis.

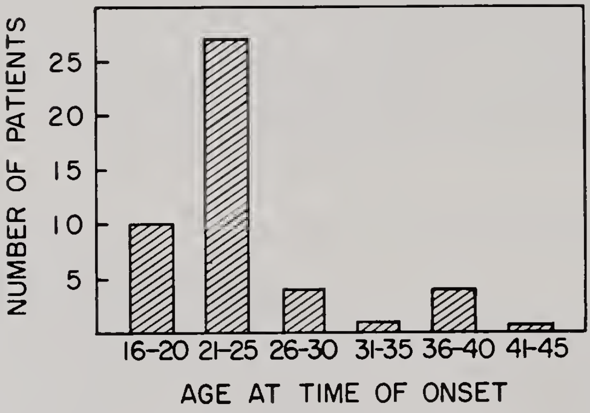

FIG. 1. Age distribution of patients with Reiter's syndrome.

The possibility of a seasonal and geographical predilection was investigated. Although cases were recorded in all seasons, these data suggest a slightly increased incidence in late summer and early fall. Geographically the disease knows no national boundaries since soldiers stationed in all parts of the world were affected. However, the greatest number of cases had their onset in Europe and in the United States, undoubtedly reflecting the increased troop concentration in these areas.

What brings the patient with Reiter's syndrome to the physician? In table 1 I have recorded the patients' chief complaints. Several of the patients had multiple complaints simultaneously. Therefore, the total exceeds the actual number of patients in our group. The most frequent initial complaint was the urethral discharge, usually occurring from 3 days to 6 weeks after venereal exposure without benefit of prophylaxis. In those patients who did not present themselves with a urethral discharge the history of recent mild discharge could be elicited. In these cases the discharge would be present in the morning upon arising, demonstrated by a white encrusted matter over the tip of the glans. In order to void it would be necessary for some of these patients to manually separate the orifice of the urethral meatus from the encrusted mucoid material.

TABLE 1: Chief Complaints

Urethral discharge	27
Arthritis	9
Dysuria	7
Fever, malaise, URI	6
Conjunctivitis	4
Terminal hematuria	2
Stomatitis	1

In table 2 the various signs and symptoms which may be encountered during the course of Reiter's syndrome are recorded. Although, as mentioned, 5 patients did not have the complete triad, it should be noted that the conjunctivitis is often transient and may be easily missed. Often the patient may complain only of a mild burning or a "gritty" sensation over his eye,

TABLE 2: Signs and Symptoms

Urethritis	47
Arthritis	47
Conjunctivitis	42
Balanitis	13
GU tract (dysuria and urgency)	12
Fever and malaise	10
Prostatitis	7
Cutaneous	4
Keratodermia blennorrhagica	3
Cardiac	3
Pneumonitis	1
Gastroenteritis	1
Stomatitis	2
Blepharitis	1
Corneal ulcers	2
Uveitis	2
Subcutaneous nodules	0
Diarrhea	0
Pleurisy	0

5 cases did not have complete triad.

which rapidly disappears. In contradistinction to rheumatoid arthritis, there were no subcutaneous nodules. Unlike the variety of Reiter's syndrome frequently encountered in Europe, diarrhea was not found to be a feature of the group of cases that we have studied.

An attempt was made to determine whether any joints or group of joints were more frequently involved. In table 3 the frequency of joints involved clinically are recorded. Of the upper extremity joints the shoulders were involved most frequently. In contradistinction to rheumatoid arthritis the proximal interphalangeal joints were not conspicuously involved. The upper extremity joints were involved 28 times, as opposed to the lower extremities in which there were 106 instances of involvement. In the lower extremities the knees were most frequently involved, followed by ankle and hip disturbances. The arthropathy of Reiter's syndrome appears to favor the lower extremities, in contradistinction to rheumatoid arthritis in which the joints of the upper extremities are more often involved. In addition to the lower extremity predilection the pattern of joint involvement is of interest in that there appeared to be a distinct tendency toward asymmetrical involvement. This again contrasts with rheumatoid arthritis in which symmetry of joint involvement is one of the major diagnostic features. Other articular and soft tissue manifestations prominently found in this disorder include pain in the back, usually confined to the region of the lumbar spine and sacroiliac joints. Another common complaint is heel tenderness euphemistically referred to as "lover's heel." This finding was once thought to be a prominent feature of gonococcal arthritis; however, it is most likely that these latter cases were either cases of Reiter's syndrome or the two diseases occurred concomitantly.

TABLE 3: Frequency of Joints Involved in 47 Patients with Reiter's Syndrome

		Total
Upper extremities		
Proximal interphalangeal		
Right	1	1
Left	0	
Metacarpophalangeal		
Right	3	4
Left	1	
Wrist		
Right	2	4
Left	2	
Elbows		
Right	3	5
Left	2	
Shoulder		
Right	5	14
Left	9	
TOTAL		28
Lower extremities		
Proximal interphalangeal		
Right	1	6
Left	5	
Metatarsophalangeal		
Right	11	17
Left	6	
Ankles		
Right	10	21
Left	11	
Knees		
Right	21	41
Left	20	
Hips		
Right	12	21
Left	9	
TOTAL		106

From a laboratory standpoint there is nothing distinctive about Reiter's syndrome. Leukocytosis, an elevation of sedimentation rate, and a positive C-reactive protein are the usual findings. Cultures of urethral, conjunctival and synovial fluid failed to incriminate any pathogen. However, there were 4 cases of concomitant gonorrheal urethritis preceding the arthritis. In none of these cases, nor in any other patients in whom arthrocenteses were performed could *Neisseria gonorrhoeae* be cultured from the synovial fluid despite the use of chocolate agar and increased carbon dioxide tension during culture in some cases. Although the gonorrheal urethritis responded to antibiotics the arthritis was not prevented.

The relationship of Reiter's syndrome to rheumatoid arthritis has been debated for many years. It has been well established that 85 per cent of patients with classical rheumatoid arthritis will have a positive serologic test for rheumatoid factor with the bentonite flocculation test. In 14 cases tested for rheumatoid factor there were no positive results with the bentonite flocculation test or the Rose-Waaler sensitized sheep cell agglutination test. This finding has remained consistent upon testing additional cases of 1960 and 1961 not included in this series.

The radiographic changes occurring in this syndrome have been the subject of several papers.[2, 3, 4] Although many of these findings are nonspecific and can be found in any inflammatory arthritis, one type of lesion occurs fairly characteristically. That is the proliferative, fluffy periostitis that projects anteriorly from the inferior surface of the calcaneus and is responsible for the heel tenderness seen in this illness (figure 2). The presence of myocarditis, although unusual, may be severe. Figure 3 demonstrates atrial flutter-fibrillation in the standard limb leads and the unipolar leads and first degree heart block in the precordial leads, as seen in a patient with severe Reiter's myocarditis who subsequently recovered.

The treatment of Reiter's syndrome has been rather controversial, particularly with regard to the use of antibiotics. In 60 courses of antibiotic therapy in 47 patients in only 1 case was there thought to be improvement in the arthritis soon after the administration of tetracycline. Indeed, it was not unusual to observe progressive joint involvement in the face of antibiotic therapy.

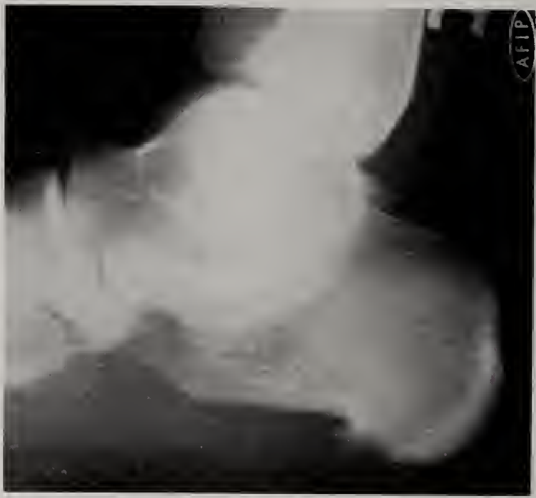

FIG. 2. Fluffy, proliferative periostitis of the calcaneus characteristically seen in Reiter's syndrome.

A reëvaluation of 37 of the original 47 cases was attempted. These data (table 4) revealed many spontaneous recurrences of urethritis and conjunctivitis and chronic involvement of the joints. Despite this, in only 4 cases could the patient be described as doing poorly and unable to work. The remainder could be gainfully employed despite intermittent exacerbations.

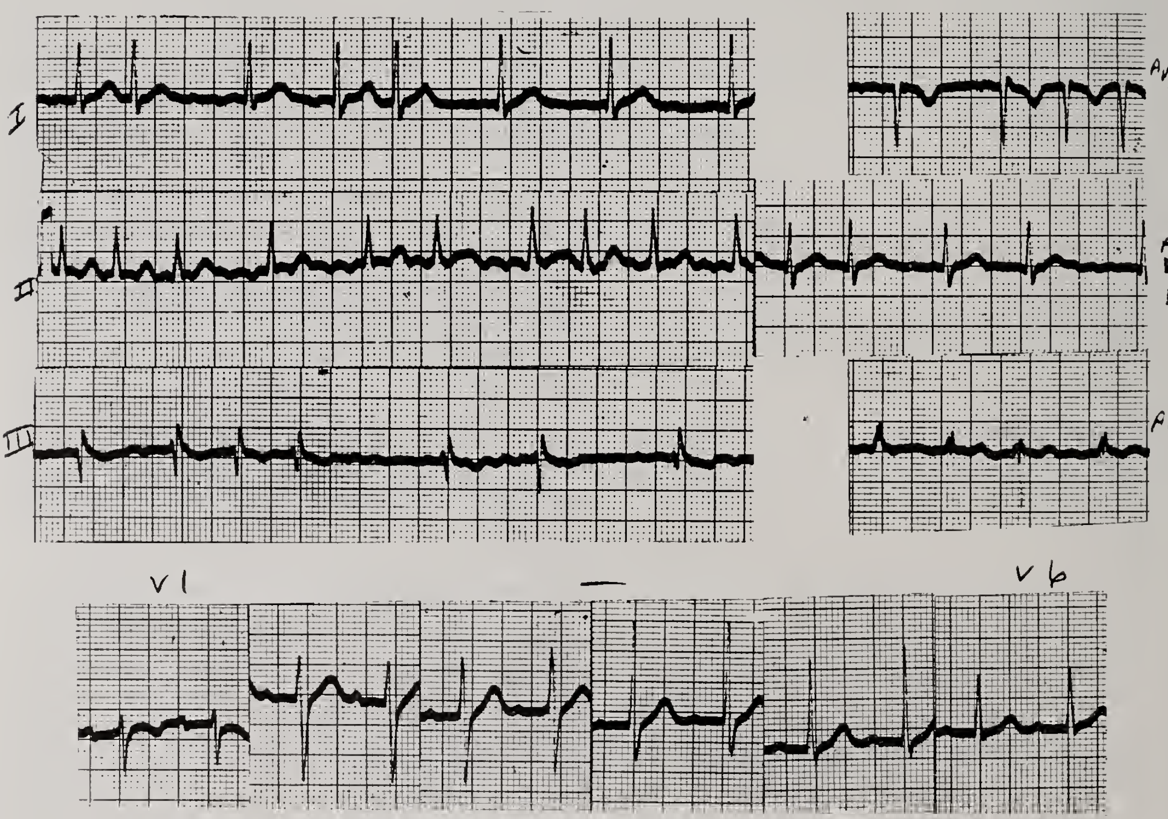

FIG. 3. Electrocardiographic abnormality in a patient with myocarditis associated with Reiter's syndrome.

Discussion

Although Reiter's syndrome continues to be a problem in the military and civilian life there is an increasing tendency to recognize this disorder and separate it from other inflammatory and infectious arthritides such as rheumatoid arthritis and gonococcal arthritis. Unlike rheumatoid arthritis the more severe cases of Reiter's syndrome tend to run a slowly improving course over a period of 3 to 6 months, and the duration does not appear to be influenced appreciably by many of the usual therapeutic measures employed for inflammatory arthritis. Corticosteroids, phenylbutazone, salicylates, physical therapy and orthopedic corrective measures have their place, but antibiotics do not appear to be of any value.

TABLE 4: Reëvaluation of 37 Cases of Reiter's Syndrome

Recurrences	
Arthritis	15
Arthralgia	15
Urethritis	18
Conjunctivitis	19
Uveitis	1
Keratodermia	2
No Recurrences	
	4
Current Status	
Excellent	5
Good	17
Fair	11
Poor	4

The prognosis for this disorder is generally good although recurrences may occur spontaneously without antecedent venereal exposure.[5, 6] These spontaneous recurrences are not readily explicable in light of the probable infectious etiology of this disorder. In this regard, as a preventative for further attacks all patients should be advised to use a condom at the time of any sexual indiscretion. It appears to be an inescapable conclusion from this and other studies that this venereal form, as distinguished from the epidemic gastrointestinal variety, develops within 3 days to 6 weeks after sexual intercourse without prophylaxis.

It is not unusual for this condition to be confused with psoriasis, rheumatoid arthritis, and psoriatic arthritis. A severe case of pustular psoriasis with extrusion of the nails may not be distinguishable either clinically or microscopically from keratodermia blennorrhagica. It is therefore necessary to question patients in whom the diagnosis is suspected quite specifically for antecedent urethritis and conjunctivitis.

The classic triad is the hallmark of the disease. Failure to specifically question and examine a young man for the manifestations of this disease may result in misdiagnosis and, as is more often the case, relegation to a wastebasket diagnosis of "rheumatoid arthritis."

Summary

Forty-seven cases of Reiter's syndrome treated at Walter Reed General Hospital between the years of 1949 and 1959 have been reviewed. These cases occurred in young men, usually after venereal exposure. The disease appeared to be world-wide in distribution and showed a seasonal predilection for late summer and early fall. The joints of the lower extremities were more frequently involved than the upper extremities and in an asymmetrical distribution. Laboratory tests for the rheumatoid factor employing the bentonite flocculation and Rose-Waaler tests were negative. Treatment with antibiotics had little effect upon the joint improvement. The disease appeared to gradually remit over a period of months. All patients in this study improved. Although the disease may recur the majority of patients remained in good health.

N.B. I wish to extend my thanks to the staff and consultants of the Walter Reed General Hospital for their help in assembling these data.

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Clinical and Laboratory Evaluation of a Simplified Measurement of Serum Beta Lipoprotein

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A METHOD EMPLOYING a simple precipitation technique for the estimation of serum beta lipoprotein has recently been published.[1] It is based on the observation that serum mixed with a buffered solution of K-agar results in a colloidal precipitate that yields an optical density proportional to the serum content of beta lipoprotein. Such a determination is rapid, inexpensive and requires no unusual laboratory apparatus. It therefore seemed desirable to evaluate this test during the course of other studies in which multiple lipid measurements were being obtained on sera from normal subjects and selected patients. Our objective was to correlate the new precipitin measurement with other serum lipid fractions in an effort to appraise the potential clinical usefulness of this procedure. This paper summarizes our impression of this test based on observations from 30 subjects.

Material and Method

Details of the method and the source of reagents have been previously described.[1] The reagents required for the tests, a buffered K-agar solution and an agar-free control buffer, are stable and can be stored in a refrigerator. Aside from periodically making the reagents the procedure involves the separation of approximately 0.5 ml. of serum, mixing 1 fraction of serum with the buffered K-agar and mixing an equal fraction of serum with the control buffer in each of 2 cuvettes, and obtaining the optical density of each immediately (or within 30 minutes) in a colorimeter. The difference of the 2 optical density readings is the K-agar value. This value may be considered the final measurement or may be used to estimate one or more of the cholesterol fractions, as will be discussed. In our laboratory the Coleman type B cuvettes (10 by 75 mm.) and the Coleman Junior Spectrophotometer were employed.

For the purpose of this study the other lipid fractions measured included serum total lipid,[2] triglyceride,[3] total cholesterol,[4] and per cent of beta lipoprotein cholesterol.[5] Beta cholesterol as mg. per 100 ml. was obtained by multiplying the per cent of beta cholesterol by the value for serum total cholesterol measured as previously noted.

Subjects were sampled for lipid testing after an overnight fast unless otherwise stated. When postprandial blood was obtained it was drawn at 3 and 5 hours after a standard test that included 40 Gm. of fat. Included in this study were healthy hospital personnel, patients with a history of coronary heart disease and elevated serum lipids, and other persons selected on the basis of serum lipid values above or below the usual ranges of normal. Three subjects were sampled on more than one occasion to demonstrate the effects of diet or drug therapy on the lipid measurements.

Results

The lipid findings from 30 subjects studied in detail are included in table 1. The table is generally divided to indicate subjects with essentially normal and high or low serum lipids to clearly present the K-agar values through all ranges of lipid concentrations. The subjects with hyperlipidemia are further separated to indicate those with or without diagnosed coronary heart disease. That this is a valid clinical distinction is attested to by the selection of patients with confirmed myocardial infarction, typical angina pectoris, or both, whereas the remainder of the hyperlipi-

TABLE 1: Comparison of the K-agar Determination with Other Lipid Fractions of Sera from 30 Subjects

Case No.	Age	Sex	K-agar	Calculated B-lipoprotein Cholesterol	Measured B-lipoprotein Cholesterol (110–210)	Calculated Total Cholesterol	Measured Total Cholesterol (150–250)	Triglyceride (80–180)	Total Lipid (500–800)
A. Normal subjects									
1	26	M	0.103	179	175	214	216	133	625
2	26	M	0.059	97	119	130	164	71	375
3	27	M	0.074	125	160	158	186	287	732
4	36	F	0.099	172	181	206	204	—	588
5	38	M	0.127	224	247	260	276	86	650
6	39	M	0.120	211	230	246	268	246	875
7	43	M	0.106	184	166	220	202	165	688
8	52	M	0.102	177	111	211	145	76	550
9	54	M	0.086	148	135	181	162	130	588
10	59	F	0.131	232	192	267	229	—	—
Mean			0.101	175	172	209	204	149	630
B. Hypolipidemia									
11	28	M	0.051	82	80	114	88	—	—
12	52	F	0.031	45	63	76	83	50	300
13	53	M	0.066	110	91	143	135	117	538
14	70	M	0.093	161	92	195	132	—	—
Mean			0.060	99	82	132	110	83	419
C. Hyperlipidemia without known heart disease									
15	35	F	0.350	641	742	687	785	735	8800
16	35	M	0.189	340	281	379	315	183	788
17	46	F	0.178	320	327	358	361	204	1000
18	46	M	0.119	209	288	245	297	381	1175
19	47	M	0.090	155	212	189	236	453	1015
20	50	M	0.242	439	383	480	394	757	—
21	58	F	0.185	333	285	371	373	82	900
22	62	M	0.145	258	257	294	321	145	888
Mean			0.187	337	347	375	385	368	2081
D. Hyperlipidemia with coronary heart disease									
23	30	F	0.208	376	357	415	400	127	938
24	46	M	0.228	413	394	453	425	122	975
25	52	F	0.110	192	258	227	314	66	712
26	53	M	0.227	411	365	451	394	249	1025
27	57	M	0.129	228	259	263	309	84	700
28	60	F	0.261	475	472	516	520	114	1200
29	62	F	0.243	441	397	482	447	122	988
30	66	M	0.241	438	500	478	525	332	1400
Mean			0.206	372	375	411	417	152	992

demic subjects were without signs or symptoms of any form of heart disease.

The mean K-agar value for the normal subjects was 0.101 optical density units (range 0.059 to 0.127). The mean K-agar value for the hypolipidemic subjects was 0.060 (range 0.031 to 0.093) and for all hyperlipidemic subjects was 0.197 optical density units (range 0.090 to 0.350). Of the latter, the mean K-agar value for subjects with coronary heart disease was 0.206 and for subjects without heart disease was 0.187. One can infer from these data that the normal range is about 0.70 to 0.120 optical density units.

That the K-agar value is proportional to the beta lipoprotein cholesterol may be inferred by inspection of the results in the extreme groups, that is, the subjects with hypo- and hyperlipidemia. This finding was pointed out by the original author of the method and is substantiated in this study by determining the statistical correlation between the K-agar values and the other lipid measurements. The correlation coefficients are as follows (a coefficient of 1 would denote a perfect correlation between 2 variables):

K-agar and beta cholesterol = 0.954
K-agar and total cholesterol = 0.955
K-agar and triglyceride = 0.481
K-agar and total lipid = 0.632

From inspection of these coefficients one can appreciate that the K-agar value actually closely approximates both the serum beta and the total cholesterol. This is because elevation of the total cholesterol is usually accompanied by an elevation in that fraction of the total that is beta cholesterol. Therefore, given the K-agar value for a serum one should be able to predict either or both of the cholesterol values with reasonable accuracy. This would require the computation of the statistical regression lines for K-agar and either or both of the cholesterol fractions based on antecedent measurement of these values in a sufficiently large number of subjects. The regression equations obtained from the data in table 1 are as follows:

$$\text{Beta cholesterol} = -13.5 + (1{,}872.2) \times (\text{K-agar value})$$

$$\text{Total cholesterol} = +16.6 + (1{,}915.2) \times (\text{K-agar value})$$

(Similar but not identical equations were described in the original description of the test.) To use the above equations one would have to employ the same size and type of cuvettes in running the test in order to obtain comparable optical density readings.

The calculated values of total and beta cholesterol are indicated in table 1 for comparison with those actually measured in the laboratory. Examination of the calculated and measured beta and total cholesterol from the 30 sets of observations revealed the following discrepancies: There were 2 subjects (nos. 10 and 14) in whom the calculated beta and total cholesterol were above the anticipated range for their respective groups when in fact the measured values fell within that range. Similarly, there were 3 subjects (nos. 2, 18 and 25) in whom the calculated beta and total cholesterol were below the anticipated range for their respective groups when in fact the measured values fell within that range. An additional subject (no. 5) had the calculated total cholesterol only within the normal range when that obtained by measurement was elevated.

As seen from the means of the various groupings of subjects, all of tests in general reflect hypo- or hyperlipidemia. Nevertheless, there are demonstrated 2 examples in which the cholesterols were normal but the triglycerides were elevated (nos. 3 and 19). Additionally, there are a number of examples in which the triglycerides were normal but the cholesterols were elevated (nos. 21, 22, 23, 24, 25, 27, 28 and 29). This observation is not unexpected and serves to reëmphasize the point that the measurement of either serum cholesterol or triglyceride alone may miss a significant lipid abnormality. Fortunately, elevation of the latter substances may be inferred by inspection of the serum for lactescence or semi-quantitated by recording the optical density with the use of the same cuvettes and colorimeter employed in the K-agar measurement. An application of such a method is described in an earlier communication from this laboratory.[6]

TABLE 2: Reproducibility of the K-agar Test as Determined from Duplicate Aliquots of 10 Sera

Case No.	Pair Determinations		Difference
	1st	2nd	
1	0.051	0.059	0.008
2	0.074	0.075	0.001
3	0.117	0.111	0.006
4	0.118	0.120	0.003
5	0.119	0.117	0.002
6	0.119	0.127	0.008
7	0.133	0.127	0.006
8	0.136	0.138	0.002
9	0.145	0.135	0.010
10	0.175	0.176	0.001
Mean			0.0047

The K-agar values reported in table 2 were obtained to evaluate the reproducibility of the test as measured on duplicate aliquots of the same serum. Blood was drawn from each of 10 subjects, placed into pairs of coded tubes, and submitted to the technician for K-agar measurement on each prior to identification of the samples. The mean absolute difference among the paired unknown specimens was approximately 0.005 optical density units.

In table 3 are demonstrated the effects of diet and drug therapy in 3 subjects. The first patient was discovered when a fasting blood serum was noted to be markedly lactescent. He proved to have idiopathic hyperlipemia that regressed when fat was restricted in his diet. Note that the K-agar values progressively declined during the period of therapy. The second patient had lupus erythematosus and the nephrotic syndrome. Dramatic response occurred during steroid therapy, and the decline in serum lipid values was clearly reflected in the K-agar measurement. The third subject was normal and had ingested a fatty test meal to screen for postprandial hyperlipemia. The cholesterol, the triglyceride fractions, and the K-agar value showed no significant change during the period of the study.

TABLE 3: K-agar Values and Other Lipid Fractions from 3 Subjects: Influence of Diet or Drug Therapy

Case No.	Date	Clinical Status (therapy)	K-agar	B-cholesterol	Total Cholesterol	Triglyceride
20	12/14/61	Hyperlipemia (low fat diet)	0.242	383	394	757
	12/27/61		0.150	274	304	331
	2/26/62		0.159	271	293	248
	2/27/62		0.124	226	247	318
15	12/13/61	Nephrotic syndrome (steroids)	0.350	770	785	735
	1/19/62		0.088	219	235	137
7	4/27/62	Normal fasting	0.106	166	202	165
		3 hr. postprandial	0.110	174	212	172
		5 hr. postprandial	0.114	172	215	161

Discussion

The K-agar test of Boyle and Moore appears to be a rapid means of estimating the beta (and total) cholesterol content of serum with reasonable accuracy. It should be readily adaptable as an office procedure and in terms of reagents will cost less than a cent per test. For comparison, the simplified procedures for total cholesterol determination employing p-toluene-sulfonic acid cost 5 cents or more per test to run and in our experience are less reliable. When compared to cholesterol as determined by the method reported in this paper, 25 tests run by a skilled technician employing the method of Pearson and associates[7] resulted in a correlation coefficient of 0.809. In contrast, the cholesterol calculated from the K-agar values from the 30 subjects reported in this communication would result in a correlation coefficient of 0.955. It is apparent that the latter test yields values closer to those obtained by the reference method employed in the research laboratory, namely, that of Sperry and Webb.[4] When experience is gained in the measurement and interpretation of the K-agar value, it would seem simpler and more desirable to use the optical density measurement as the final resultant with a value of about 0.120 to separate normal from hyperbeta lipoproteinemia.

That the test gives good reproducibility is demonstrated by the experiment reported in table 2. Ten pairs of duplicate specimens unknown to the technician yielded an average difference of 0.005 (about ±1 per cent of the pair means). This was obtained on specimens analyzed on the day of sampling. Repeated determinations from the same serum on successive days indicate some decline of the K-agar value. This phenomenon is most pronounced in sera with high initial values and was noted by the original author.

The data in table 3 illustrate the potential clinical application in 2 patients treated for hyperlipidemia. Lowering of the beta cholesterol, total cholesterol and triglyceride values is accompanied by a fall in the K-agar values. The lack of significant change in the K-agar value in the normal subject after ingestion of a fat test meal suggests that in most instances it is unnecessary to require that subjects be fasting for blood sampling. Severe lactescence of postprandial serum might result in some inaccuracy of the method. However, that is neither apparent in the data of table 3 nor an inherent drawback, since a tentative diagnosis of hyperlipidemia would then be inferred by mere inspection of the serum.

It should be mentioned that except for the "normal" subjects the design of our study precluded random sampling. Therefore, coronary subjects with all lipid parameters normal, although not specifically excluded, were not obtained. For this reason and with a sample limited to 30 subjects we cannot draw conclusions as to the application of the test as a procedure to screen for coronary susceptible subjects. We can suggest, on the basis of data previously reported[8] from normal and coronary subjects in whom substantial differences in cholesterol values were apparent when comparisons at relatively young ages were made, that the K-agar test might well be employed in routine studies of younger individuals. At any rate, the test does appear useful as a practical means of evaluating the status of the serum beta cholesterol and total cholesterol.

Summary

A precipitation technique for the estimation of serum beta lipoprotein employing buffered K-agar has been compared with other serum lipid measurements in 30 subjects. It was found to

(*Continued on page 54*)

Diarrhea and Candida Albicans Infestation of the Colon*

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It has been assumed that diarrhea following antibiotic therapy may be due to suppression of normal bacterial flora and a consequent overgrowth of fungi with resulting diarrhea. In an excellent study Brabander et al[1] stated that such symptoms as diarrhea, bleeding from the rectal mucosa, flatulence, abdominal pain, and anal itching can be due to intestinal moniliasis. They found that the symptoms subsided when the *Candida albicans* infestation was reduced by gentian violet or nystatin, only to return if the infection recurred. Dobias[2] reported the cases of 4 children suffering from oral candidiasis (thrush) and diarrhea. *Candida albicans* had been cultured from the stools. The thrush and the diarrhea cleared up with the use of nystatin. Dobias postulated the presence of intestinal candidiasis as the cause of the diarrhea.

As has been pointed out by Harvey Blank,[3] rigid proof of the diagnosis of moniliasis of the colon presents special problems. Since *Candida albicans* may be a normal inhabitant of the colon, mere recovery of this organism on culture does not prove its significance in causing symptoms. Blank believes that the most significant evidence of pathogenicity of the fungus would be the relief of symptoms following the administration of a very specific antimonilial agent such as nystatin. Since nystatin has no effect on bacteria or parasites, any clinical response following its administration would be attributable to its antifungus activity.

Materials and Methods

Seventy-five unselected private patients suffering from acute or chronic diarrhea were studied. Material for examination was obtained directly from the bowel wall by means of cotton swabs at the time of sigmoidoscopy in the unprepared patient. Routine bacteriologic, parasitologic and fungus studies were performed and the character of the cellular exudate, if present, was noted. Specimens were streaked directly on chlamydospore agar (Difco). Colony observations were made for the presence of typical chlamydospores whose presence was considered sufficient for identification of *Candida albicans*. Colonies not showing typical chlamydospores were isolated and the fermentation pattern determined for those colonies having typical Candida morphology. Specimens having questionable colonies after 48 hours on chlamydospore agar were either reexamined or planted on one or more of the following media: Sabouraud's, corn meal, zein, blood, or Levine's eosin-methylene blue agar in 10 per cent CO_2. When deemed necessary all isolated colonies appearing to be Candida species were identified by their fermentation pattern.

All patients received a general physical examination, sigmoidoscopy, and a barium enema X-ray examination. No patient was examined until at least 3 weeks had elapsed since the last administration of barium, bismuth, kaolin or aluminium hydroxide preparations, since these materials when present in the feces may interfere with the identification of microörganisms.

All patients harboring *Candida albicans* in the bowel exudate were treated with nystatin. One 500,000 unit tablet was administered 4 times a day for 10 days. Nystatin is an antibiotic of broad antifungal activity derived from a species of the actinomycetes, *Streptomyces noursei*. It possesses no antibacterial or antiparasitic activity and is specifically fungistatic. No other treatment of the diarrhea was employed. There was no diet change ordered, and no antispasmodics or sedatives were prescribed.

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* Read before the Section of Gastroenterology and Proctology at the 110th Annual Meeting of the American Medical Association in New York City, June 29, 1961.

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Results

In 25 of the 75 patients studied *Candida albicans* was identified as the sole possible pathogen. In these 25 individuals no other cause for diarrhea was found. Sigmoidoscopy and barium enema examination were normal. Each of these 25 patients received a 10-day course of nystatin (500,000 units q.i.d.). Eighteen responded with prompt relief of diarrhea within 2 to 3 days. There were no recurrences in this group except in 1 patient who received repeated courses of small doses of tetracycline for the treatment of arthritis. Three patients failed to respond to therapy, and 4 received only partial and temporary relief from diarrhea even after prolonged treatment with nystatin.

The ages of the 18 patients who responded favorably to nystatin varied from 25 to 80 years, with an average age of 54.3 years. There were 10 men and 8 women. No patient suffered from any of those diseases which may predispose to moniliasis, such as diabetes, blood dyscrasias and debilitating illnesses. The duration of the diarrhea before treatment varied from 10 days to 4 years, with an average duration of 15.5 months.

Twelve of the 18 patients had received no antibiotics within the year prior to their being studied. The other 6 had received varying courses of antibiotics as follows: One patient had taken many courses of tetracycline for recurrent pyelitis over a 4-year period; her diarrhea had extended over this same 4-year period. Another patient had received 4 Gm. of Mysteclin-V® over a 4-day period, 3 months before he was studied for recurrent diarrhea beginning 9 months before the Mysteclin administration. Two other patients had a similar course of Mysteclin-V 9 months and 6 months, respectively, before the onset of diarrhea. Another patient had a course of a sulfonamide for 10 days 3 months before the onset of diarrhea.

One patient received small doses of tetracycline, 50 mg. every 2 days for the control of rheumatoid arthritis. It was of interest that this individual on 2 separate occasions has had prolonged diarrhea following such small doses of tetracycline. On one such occasion diarrhea persisted as long as 4 months following the cessation of Terramycin®. At the end of this time *Candida albicans* was demonstrated in the stool, nystatin was prescribed, and the diarrhea was stopped within 2 days. The diarrhea was then absent for a period of some 8 months when Terramycin in small dosage was resumed with the return of the diarrhea in a few weeks. The same sequence of events recurred, and after a long period of diarrhea *Candida albicans* infestation was again demonstrated, and again diarrhea was promptly relieved following the administration of nystatin.

The stool and bowel exudate of the 25 patients harboring *Candida albicans* revealed no blood and only small amounts of mucus. Microscopic examination revealed no cellular response. No lesions were visible on sigmoidoscopy. Some of the patients suffered mild, low, crampy abdominal pain with distention and occasional pruritus ani. All were afebrile, and none showed any evidence of toxicity or weight loss.

Follow-up cultures were not routinely done because *Candida albicans* may return to the stools as a normal inhabitant. However, in 7 of the 18 patients successfully treated, cultures made 6 weeks after treatment showed either none or very few *Candida albicans* to be present. On the other hand, similar post-treatment examination of one of the failures demonstrated no decrease in *Candida albicans* in the bowel exudate.

Toxicity due to nystatin was observed in only 1 patient (one of the failures), who developed an exacerbation of diarrhea which promptly subsided after stopping the drug. The fact that nystatin is poorly absorbed from the gastrointestinal tract probably lessens the incidence of toxicity. There is no evidence of the development of nystatin-resistant fungi.

Discussion

A prompt clinical response to specific antifungal therapy strengthens our belief that diarrhea can be due to *Candida albicans* infestations. Such diarrhea may be prolonged and moderately severe but characteristically does not cause toxicity or inflammatory reaction. There is no evidence of invasiveness of the fungus in our patients. We have no knowledge as to why the fungus may produce symptoms. The majority of our patients gave no history of antecedent antibiotic therapy within a year of the time that they were studied.

Summary

Seventy-five unselected private patients complaining of acute or chronic diarrhea were studied.

(*Continued on page 58*)

Management of Heart Disease in Pregnancy

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Pregnant patients with heart disease present special therapeutic problems. The control of these problems involves discovery of the cardiac disease, evaluation of its severity, and establishment of a program of combined obstetrical and medical management.

The observations presented here have been made at the Medical Clinic of Columbia Hospital for Women since 1954. The few statistics included are drawn from the 5-year period, 1956 through 1960.

Recognition

If the pregnant patient is aware of the presence of heart disease, her identification as a member of this group is obvious. Many of these young women, however, have not had a thorough physical examination prior to reporting to the obstetrician and are completely unaware of the presence of any cardiac disorder. This places the responsibility for uncovering the condition squarely upon the obstetrician. He must utilize fully both history and physical examination to avoid overlooking overt or potential heart disease.

Recognizing the reluctance of many frightened young patients to volunteer any information concerning their health, it is wise to ask the patient specifically whether she has ever had scarlet fever, rheumatic fever, or inflammatory rheumatism. In addition, it is helpful to ask if any examining physician has ever mentioned hearing a heart murmur. It has been the custom at Columbia Hospital to refer all patients who answer any of these questions affirmatively to the Medical Clinic where they are reviewed by an internist.

Specific symptoms referable to the cardiovascular system should be sought. These include dyspnea on exertion, edema, chest pain, palpitation, and cough. The symptoms are unusual enough in the age group concerned to constitute immediate warning signals when they are present. Late in pregnancy some of these symptoms may arise in noncardiac patients. Even in this group, however, if the symptoms are more than very mild, examination by a cardiologist may uncover unsuspected disease.

Physical examination must include careful auscultation of the heart. This involves the use of both the bell and the diaphragm chest pieces of the stethoscope over all areas of the precordium. A faint, rumbling, diastolic murmur of mitral stenosis will be missed if only the diaphragm chest piece is used. On the other hand, the faint, blowing, early diastolic murmur of aortic insufficiency is frequently inaudible with the bell chest piece. It may only be heard with the patient sitting up, leaning forward, and holding her breath in expiration while the examiner listens with his diaphragm chest piece.

Interpretation of systolic murmurs may be extremely difficult. Many pregnant women develop systolic murmurs which disappear after delivery. These murmurs do not indicate organic heart disease, although during the course of the pregnancy their certain identification is often impossible. Ordinarily, the murmurs produced by pregnancy alone are soft, blowing, and not louder than Grade III. Usually they do not last throughout systole and usually are loudest at the base.

Any diastolic murmur probably represents organic heart disease. There are, however, auricular gallop sounds in some pregnant women which may be confused with presystolic murmurs of early mitral stenosis.[1] A bruit produced by the mammary artery may be confused with a diastolic murmur. This sound can usually be obliterated by pressing the stethoscope against the chest wall. A diastolic murmur should be interpreted as signifying organic heart disease, and the patient should be managed on this basis. Subsequent observations in a few cases may rule out heart disease.

Indecision concerning the significance of a murmur may last throughout pregnancy and into the postpartum period. Patients who present questionable murmurs should be treated as though they have heart disease. Each should be reëvaluated postpartum; then, if heart disease can be ruled out, the patient can be appropriately reassured. Tactful management of the psychologic aspects of such a course can easily avoid any undue concern or fear.

Incidence

Heart disease in pregnancy is not rare; hence, it should be specifically sought in every patient. During the 5 years beginning in January of 1956 there were 5,190 deliveries on the staff service at Columbia Hospital for Women. In this group there were 42 cases of heart disease. This incidence (0.8 per cent) is slightly lower than that reported by similar clinics in New York[1] and Boston,[2] and it may reflect the somewhat lower incidence of rheumatic heart disease in the Washington area. These data also suggest that the moderately busy obstetrician in private practice can expect to see 2 or 3 cardiac patients each year. He can also expect to see other patients whom he will suspect of having heart disease. In addition to the 42 patients with heart disease the Medical Clinic has examined many more patients with heart murmurs eventually considered innocent. There was also a small number of patients with a history of rheumatic fever in whom no evidence of heart disease was uncovered.

Obstetrical Management

As far as we can determine, heart disease rarely has any significant effect upon the pregnancy itself. The obstetrical management should be the same as that in patients who do not have heart disease. These patients should be seen more often than the average pregnant woman, and the obstetrician and cardiologist should be in frequent communication.

Therapeutic abortion has been recommended in the past, particularly for women who have severe heart disease with congestive failure. During the past 7 years no therapeutic abortions have been performed in the staff patients at Columbia Hospital for heart disease, and we believe that this procedure is very seldom necessary. It is considered for a patient who develops profound congestive failure in the first trimester and whose heart disease is not amenable to surgical correction.

The method of delivery is seldom disputed. Most authorities, both medical and obstetrical, agree that vaginal delivery is no more difficult for the patient with heart disease than is cesarean section.[3] We feel that cesarean section should be undertaken only for obstetrical indications without regard to the coëxistence of heart disease.

The choice of anesthetic is left to the anesthesiologist. We can find no advantage in the use of spinal anesthesia and are fully in favor of general anesthesia. There is, in fact, some indication that patients with a considerably reduced cardiac reserve are easier to manage under inhalation anesthesia than with spinal anesthesia.[4] We do feel that the anesthesia should be handled by an experienced anesthesiologist. The practice in many hospitals, including our own, of having the obstetrical resident give anesthesia should be avoided in the case of the cardiac patient. Fully recognizing the frequent "traffic jam" in the delivery room, with several patients ready to deliver at the same time, we feel that the most experienced anesthesiologist should be assigned to the patient with heart disease.

Medical Management

Evaluation. The status of the heart disease in pregnant women should be evaluated as it is in all cardiac patients. The type of heart disease should be determined, and the extent of impairment should be estimated. The use of the American Heart Association system of grading functional capacity is quite satisfactory. Although we have not instituted specific rules for management of patients in any class, we have used this evaluation to help judge the status of the patient's disease. Briefly, those patients in Classes 1 and 2 have a better outlook than those in Classes 3 and 4. In general, the patients in Classes 3 and 4 are examined more frequently. The search for objective tests upon which to base classification[5] has been intriguing but so far seems to offer no advantages over the system of the American Heart Association.

In addition to a careful history and physical examination the initial evaluation should include an electrocardiogram and a roentgenogram of the chest. The electrocardiogram should be interpreted exactly as it is in nonpregnant patients. Alterations incident to pregnancy have been reported,[1, 2] but these are not consistent, nor do they represent abnormalities.[6] We do not believe that pregnancy alone causes changes in the electrocardiogram which would justify an interpretation of 'abnormality'.

Alterations in the cardiac silhouette on the X-ray film develop as the pregnancy progresses. Although they are usually obvious and cause no confusion occasionally the left heart border is straightened, mimicking the contour found in mitral valve disease. We allot little significance to this finding unless it is associated with some other diagnostic feature, particularly a diastolic murmur.

Special diagnostic measures have been avoided in our clinic. Cardiac catheterization is occasionally suggested in the course of evaluating the patient with congenital heart disease. Although the procedure would at times allow greater accuracy in diagnosis, we have not yet encountered a case in which its results might dictate a change in the medical management during pregnancy. The procedure does carry some risk to the patient, and we feel that this risk would be better tolerated after delivery. The same reasoning applies to angiocardiography. In addition, we are not sure how much risk this procedure would present to the fetus. Dye dilution studies have likewise been postponed until after pregnancy. Extensive X-ray studies or fluoroscopic examinations have been avoided, in keeping with the general feeling concerning the possible genetic effects of X-radiation during pregnancy.

General medical procedures. We feel that the simpler management can be made and the fewer didactic rules laid down, the more successful it will be. Every attempt should be made to express the necessary restrictions and instructions in terms of the patient's normal living habits and in language she can readily understand.

Rest. The keynote to successful management of the pregnant cardiac patient is attention to rest. If the patient does not become exhausted, overtired, or dyspneic, she will probably be able to carry her pregnancy to a successful conclusion. We advise daily rest of 10 to 12 hours, with 8 to 10 hours in bed at night, and 1 to 2 hours in bed in the afternoon. The patient is told to avoid any activity which produces dyspnea, cough, or tiredness. She should reduce her household chores to a minimum, even if this involves sacrificing some normal fastidiousness. If there are small children at home we advise outside help with their care.

Diet. Both salt and calories need to be restricted. We make no attempt to place the patient who is not in heart failure on a truly salt-free diet but outline a program of sodium restriction aimed at achieving a diet containing less than 2.0 Gm. daily. Calorie intake should also be guarded so that the patient gains only 20 pounds or less during the pregnancy. Both of these restrictions also seem to be in the interest of good obstetrical management.

Diuretics. When edema first appears diuretics should be started promptly. Practically, this offers no problem since both obstetricians and cardiologists are oriented toward the early use of diuretics. The choice of diuretic is entirely up to the attending physician. We have used chlorthiazide most frequently. Recent evidence favoring an increase in aldosterone secretion in normal pregnancy suggests that spiralactone preparations may be useful.[7]

Digitalis. We have used digitalis only in the presence of congestive heart failure or paroxysmal tachycardia. In these circumstances we have used full doses of the drug, believing that pregnancy does not significantly modify its efficacy.

Quinidine. During pregnancy quinidine should not be used unless all other measures fail to interrupt a disturbing arrhythmia. Fortunately, arrhythmias are not common in pregnancy, and most of them respond satisfactorily to digitalis or procaine amide. Others have advocated the use of quinidine,[8] but we feel that its oxytocic properties[9] constitute a rather firm contraindication. We have seen 1 case in which a paroxysmal nodal tachycardia did not respond to any other therapeutic measure. On the third day of the arrythmia the patient was becoming exhausted, and quinidine was given. The arrhythmia was terminated, and fortunately the patient did not go into premature labor.

Antibiotics. Patients with rheumatic heart disease or with congenital septal defects are given penicillin prophylactically before delivery. We usually use Bicillin®, 600,000 to 1,200,000 units intramuscularly at the beginning of the ninth month and again 3 weeks later. If these patients have any dental work done during the pregnancy prophylactic penicillin is given beforehand.

Special Problems

Congestive heart failure. Early congestive failure is somewhat more difficult to recognize during pregnancy than in nonpregnant patients. As normal pregnancy continues there is often some increasing dyspnea. It requires acute perceptiveness, as well as frequent observation of the patient, to determine when such increasing dyspnea signifies congestive failure. Nocturnal dyspnea is a significant, ominous symptom. The physical signs of heart failure are not different from those seen in nonpregnant patients. Pulmonary rales have been described in normal pregnancy,[8] but we have not observed moist rales at the bases which could be confused with those produced by passive congestion. Diastolic gallop rhythm likewise is infrequent during pregnancy, although an atrial gallop has been recorded. Elevation of the venous pressure and prolongation of circulation time are helpful signs. The latter is particularly useful, since the circulation time in normal pregnancy is somewhat shortened.[1] Serial determinations of vital capacity have been disappointing as guides to the onset of failure. A 2-year study of serial observations convinced us that the test is more time-consuming than valuable.

As soon as congestive heart failure is diagnosed, treatment with digitalis, diuretics, rigid salt restriction, and marked restriction of physical activity is begun. Three of our 42 patients developed congestive failure, all of them during the sixth month. Each responded promptly to digitalis, along with the régime outlined above. None needed hospitalization prior to delivery for treatment of decompensation. Each was in a home situation in which satisfactory care was available. If there is any question about the adequacy of care available at home we believe such patients should be admitted directly to the hospital and treated there until compensation is restored.

Acute myocarditis. Interest in myocarditis occurring late in pregnancy is increasing, although a well-defined syndrome has not yet emerged.[10] Certain pathologic changes have been observed in the hearts of women dying late in pregnancy,[11] raising the interesting possibility that such changes may be present in the hearts of all pregnant women. The only case in whom we could establish a diagnosis of myocarditis was a colored woman admitted in labor 2 months before the expected date of confinement. This was her sixth pregnancy, one of her previous ones terminating in a premature birth. On admission there was no indication of heart disease. Several hours after admission she arose from her bed, complained of dizziness and weakness, then slumped to the floor. After a few convulsive movements she died. Postmortem examination showed a diffuse leukocytic infiltration throughout the myocardium.

One other patient developed acute congestive heart failure a few hours after delivery. She, too, had presented no signs of heart disease prior to delivery. Electrocardiographic tracings were not helpful. Since she had received 2,500 c.c. of parenteral fluid following delivery and within 5 hours developed heart failure, we felt this might have precipitated the condition. The possibility of myocarditis cannot be eliminated, however, since she recovered and no pathologic specimen is available. She has had no evidence of heart disease since that time, is pregnant at the time of this writing, and is experiencing no difficulties.

Congenital heart disease. Congenital heart disease offers certain special problems. These are relatively new problems, increasing as our recognition of these lesions improves. More patients with the diagnosis of congenital heart disease are maturing and conceiving, and progressively more are carrying their pregnancies to full term. In general, our patients have experienced no more difficulty than have those with rheumatic heart disease. Patients with cyanotic congenital heart disease have a significantly higher percentage of babies with congenital heart disease.[12, 13] We do not know how to prevent this eventuality.

Chest pain was a significant feature in one of our patients with pulmonic stenosis. This patient did not have chest pain prior to her pregnancy, nor has she had it in a subsequent pregnancy. The pain was located in various areas of her chest, both on the right and the left, was very sharp, and was very short-lived. The origin of the pain is not clear, although it is engaging to consider that the pulmonary artery itself may have been the source.

Myocardial infarction. This is an uncommon complication of pregnancy, largely because of the age group involved. To date only 23 cases have been reported.[14] All of those who have lived through the first 2 days have continued successfully through delivery. The patient should be managed like any other patient with myocardial infarction with no attempt to empty the uterus until labor begins spontaneously.

Cardiac surgery. With continuing improvement in surgical techniques and reduction in operative mortality the possibility of extending this form of treatment to pregnant patients is increasing. Mitral valvulotomy has been successfully performed during pregnancy,[1, 3] with no harmful effect upon the fetus. Even so, we feel that the pregnant patient poses an increased operative risk. It is our general feeling that a patient with mitral stenosis who passes through the first trimester successfully can be best managed medically throughout the remainder of her pregnancy. The one who develops serious congestive failure during the first trimester is the one for whom we consider mitral valvulotomy. In such patients a careful analysis of the individual status in conjunction with the cardiovascular surgeon is undertaken. If the surgeon is satisfied with the risk status of the patient, and if the cardiologist is convinced that the patient will be unable to complete her pregnancy surgery is undertaken. This is less dangerous and more justifiable than therapeutic abortion.

Congenital heart disease represents a considerably more serious surgical problem. We have chosen to manage all of these patients medically, considering definitive surgical treatment only after delivery. If the mother is too ill to complete the pregnancy the chance of her successful completion of corrective surgery during the pregnancy seems even smaller.

Summary

Some of the practical problems concerning the management of the pregnant patient with heart disease have been reviewed. The source material for this review included the patients seen in the Medical Clinic of Columbia Hospital for Women during the past 8 years.

Careful history and perceptive auscultation are often required to identify the heart disease. Evaluation of the status of the heart disease includes the use of electrocardiograms and roentgenograms of the chest. Functional classification follows the system of the American Heart Association.

Obstetrical management does not differ from that in patients without heart disease. Vaginal delivery is preferred. Anesthetic choice is left to the anesthesiologist, inhalation anesthesia being preferred.

Medical management includes careful attention to rest and diet. Diuretics and digitalis are used fully when indicated. Congestive failure is treated vigorously when it develops.

Surgical correction of mitral stenosis is advised if congestive failure develops in the first trimester. Surgical approach to congenital heart disease is usually postponed until after delivery.

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correlate very well with both the serum total cholesterol and beta lipoprotein cholesterol concentration in these subjects. Indeed, in our laboratory the test was more accurate as a measurement for total cholesterol than one of the commonly employed rapid chemical methods. For this reason and because the K-agar test is economical in terms of time and reagents, further clinical appraisal appears justified.

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Viral Hepatitis Complicating Sickle-cell Anemia

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VIRAL HEPATITIS complicating sickle-cell anemia is not common. Reviewing the literature, we were able to find only a few documented reports. Since the transfusion of whole blood is often resorted to in the treatment of sickle-cell crisis, one might expect an increased incidence of homologous serum jaundice in these patients. The differential diagnosis may be made difficult by the similarity of symptoms, physical signs and laboratory results in acute viral hepatitis versus sickle-cell crisis. The purpose of this paper is to report on 2 patients believed to have had viral hepatitis complicating sickle-cell anemia and to draw attention to the difficulties encountered in diagnosis and the help derived from utilization of serial serum enzyme determinations.

Report of Cases

Case 1. A 27-year-old Negro woman was admitted to D. C. General Hospital on January 6, 1959 because of jaundice, fever, epigastric pain, vomiting and dark urine of 4 days' duration. At the age of 17 the diagnosis of sickle-cell anemia was made by positive sickle-cell preparation and subsequently substantiated by hemoglobin electrophoresis which revealed an S-S pattern. Since then she had had several episodes of sickle-cell crisis and was treated with blood transfusions. Her last previous admission was on July 1, 1958, when she was hospitalized for 1 month with severe sickle-cell crisis and acute pyelonephritis. She was treated with antibiotics and received a total of 6 blood transfusions. Following discharge she did well until 4 days prior to the last admission when she experienced anorexia, vomiting and severe epigastric pain. She also noted that her eyes had become yellow and her urine dark. Joint pain and exposure to hepatotoxic agents were denied. There was no known sickle-cell disease in the family.

The patient was well nourished and well developed and was severely jaundiced and acutely ill. The blood pressure was 110/60, the pulse rate 95 per minute, the respiratory rate 22 per minute, and the temperature 99°F. The skin, mucous membranes and sclerae were yellow-tinged. The lungs were clear to auscultation and percussion. There was a soft blowing Grade II systolic murmur at the apex. The liver was palpable 3 cm. below the right costal margin at the midclavicular line, firm and tender. The spleen and kidneys were not felt. There was no tenderness or swelling of the joints. The remainder of the examination was within normal limits.

The hematocrit was 21 per cent. The white blood cell count was 19,800, with 52 per cent segmented forms, 32 per cent lymphocytes, 6 per cent eosinophils, and 6 per cent basophils. The reticulocyte count was 7.2 per cent. A sickle-cell preparation was positive. Serologic tests for syphilis were negative. The urine was dark brown, positive for bile and urobilinogen, and contained 2+ albumin; the sediment contained 4 to 8 white blood cells and 2 to 3 granular casts per high-power field. The total bilirubin was 62 mg. per 100 ml. of blood on admission, 85 mg. a week later, and 6 mg. at the end of 4 weeks. The serum glutamic oxalacetic transaminase was 2,050 units. Serum glutamic pyruvic transaminase was 1,155 units. Serial liver function tests and enzyme determinations are shown in table 1. A roentgenogram of the chest and an electrocardiogram were within normal limits.

The patient was placed at bed rest and received supportive therapy. However, she continued to complain of headaches and severe epigastric pain. She remained conscious and lucid in spite of the serum bilirubin rising from 62 mg. to 85 mg. On January 14, a week after admission, adrenal steroid therapy was begun with 60 mg. of prednisolone daily in divided doses. Within 48 hours there was appreciable improvement of the symptoms, and the serum bilirubin fell to 34 mg. Seventy-two hours after initiation of steroid therapy the patient was essentially asymptomatic. The steroids were continued for 2 weeks in decreasing doses, and by this time, other than being mildly jaundiced, the patient felt completely well. Liver biopsy with a Vim-Silverman needle was done 3 weeks after admission.

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"The sinusoids are congested and distended by crescent-shaped erythrocytes. Cells are swollen by hemosiderin pigment and ingested red cells. There are bile casts in the canaliculi. There is some parenchymal cell unrest, as evidenced by variation in cell size and double nuclei. Stains fail to demonstrate lipofuscin, although a rare hyaline body is identified. The reticulum framework is preserved and parenchymal cell necrosis is not evident. These changes are compatible with those seen in a sickle-cell crisis. Although the possibility of viral hepatitis cannot be excluded on the basis of this material, characteristic changes as seen in uncomplicated cases are not recognized."*

TABLE 1: Results of Laboratory Tests in Case 1

	Jan. 7	Jan. 12	Jan. 14	Jan. 16	Jan. 19	Jan. 21	Jan. 23	Jan. 28	Feb. 2
Hematocrit, %	19	21	23	28	—	27	24	23	22
WBC	11,100	—	18,400	19,680	—	—	—	—	—
Urine bile	++++	++++	++++	++++	—	+++	—	++	+
Urine urobilinogen	++++	++++	++++	++++	—	+++	—	++	+
Total bilirubin	62	75	85	34	17	11	11	8	6
Direct/indirect	36/26	51/24	49/36	18/16	7/10	4/7	4/7	5/3	3.5/2.5
Alkaline phosphate	11	15	—	—	—	—	—	8	—
Thymol turbidity	18	32	—	—	11	—	—	7	—
Cephalin flocculation	—	+++	—	—	++++	—	—	++	—
Albumin/globulin	5.1/2.8	—	4.9/3.0	—	—	—	—	4.4/2.9	—
Cholesterol	—	700	—	—	692	—	—	—	—
SGOT	—	2,050	730	480	—	140	—	120	45
SGPT	—	1,155	410	322	—	74	—	40	30

Case 2. A 26-year-old Negro woman entered D. C. General Hospital on July 1, 1959 because of jaundice, pain in the right upper quadrant of the abdomen, and dark urine of 1 week's duration. She had had many episodes of jaundice and joint pain since the age of 5. Sickle-cell anemia was diagnosed by hemoglobin electrophoresis on a previous admission. Two months prior to the present admission she aborted during the second month of pregnancy and required 5 units of whole blood. There was no history of fatty food intolerance or ingestion of hepatotoxic agents.

The patient was well nourished and well developed and in no acute distress. The blood pressure was 115/65, the pulse rate 96 per minute, and the respiratory rate 20 per minute, and the temperature was 100.2°F. The head and neck were not remarkable except for the icteric sclerae. The lungs were clear to auscultation and percussion. The heart was not enlarged. There was a soft blowing Grade II systolic murmur at the apex. The aortic second sound was greater than the pulmonic. The edge of the liver was palpable 3 fingerbreadths below the right costal margin, tender and firm. The spleen and kidneys were not palpable.

The hematocrit was 24 per cent. The white blood cell count was 13,300, with 55 per cent segmented forms, 37 per cent lymphocytes, 7 per cent monocytes and 1 per cent eosinophils. The reticulocyte count was 21 per cent, and a sickle-cell preparation was positive. The urine was positive for bile and urobilinogen. The sediment contained a few white blood cells and epithelial cells per high-power field. Serologic test for syphilis was negative. The blood urea nitrogen was 10 mg. per 100 ml. of blood, the alkaline phosphatase was 10.2 units, the bilirubin was 15.3 mg. with 10.0 mg. direct and 5.3 mg. indirect, the thymol turbidity was 24.0 units, the cephalin flocculation was 3+ in 48 hours, the prothrombin time was 100 per cent, and the total protein was 7.1 Gm., with 4.1 albumin and 3.0 globulin. Serum glutamic oxalacetic transaminase was 740 units. A roentgenogram of the chest and an electrocardiogram were within normal limits.

The diagnosis of homologous serum jaundice was made on admission. The patient was placed at bed rest and given a high caloric diet. The serum bilirubin rose from 15.3 mg. to 21 mg. during the first week. The appetite improved, the abdominal pain subsided, and the patient became asymptomatic by the end of the first week. The remainder of the hospital course was uneventful. A liver biopsy was performed with a Vim-Silverman needle 9 days after admission. "The sinusoids are congested with crescent-shaped sickle cells. There is marked parenchymal cell unrest. This is characterized by ballooning of individual cells, numerous hyaline bodies with extrusion of some into the sinusoids, considerable variation in cell size and nuclear size, and numerous cells with double nuclei. In addition, traces of lipochrome pigment are noted in the Kupffer cells. Rare fragments of inspissated bile are noted within the liver cells and in a canaliculus. The majority of pigment present, however, is hemosiderin and is almost entirely within Kupffer cells. There is no evidence of erythrophagocytosis. The 'sludging' of erythrocytes in sinusoids is indicative of sickle-cell crisis."*

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* We are grateful to Dr. Hans F. Smetana of the Armed Forces Institute of Pathology, Washington, D. C., for reviewing the microscopic sections.

Discussion

Since Herrick first reported the association of sickle-shaped erythrocytes with severe anemia in 1910 several reports have been written about liver disease in sickle-cell anemia.[1-5] They all describe significant liver parenchymal damage. Song[3] reviewed 31 necropsies and noted hepatic cell damage in all. The histologic study of these livers suggested that the lesions in sickle-cell anemia were the result of hyaline thrombi produced by intrasinusoidal hemolysis, and these vascular agglutinative thrombi of the hepatic capillaries appeared to be responsible for the anoxic necrosis. The liver disease in sickle-cell anemia is manifested by those liver function tests which reveal parenchymal damage, such as hyperbilirubinemia with increase of direct and indirect serum bilirubin, abnormal cephalin flocculation and thymol turbidity, normal or slight increase in alkaline phosphatase and prolonged prothrombin time, all of which are similar to those of hepatitis. The clinical manifestations of sickle-cell crisis are variable.[6, 7] They may simulate many other diseases. Among those diseases viral hepatitis is one which not only can present the same clinical manifestations but also the same laboratory findings. It is obvious that the diagnosis of viral hepatitis in a patient with sickle-cell anemia may be very difficult, since it is easily mistaken for sickle-cell crisis. It probably explains the scanty reporting of acute hepatitis in patients with sickle-cell anemia in spite of the fact that the incidence of homologous serum jaundice would be expected to be higher because of more frequent blood transfusions given for hemolytic crises.[8] Bedell et al[9] reported 4 cases of viral hepatitis complicating sickle-cell anemia. The diagnosis was based on the clinical history, physical findings, and liver function tests alone. Bogoch et al,[4] studying 4 liver biopsy specimens from patients with sickle-cell anemia, noted one which they thought had changes compatible with hepatitis, but they attributed these to a manifestation of the sickle-cell disease per se, since the clinical picture was not suggestive of hepatitis. It is not surprising that many cases of viral hepatitis were misdiagnosed as sickle-cell crisis or, less often, vice versa.

Various serum enzyme determinations have gained widespread acceptance in assessing liver diseases. Among these the enzyme glutamic oxalacetic transaminase is commonly used. The serum activity of this enzyme, although elevated in many diseases, attains its highest and often diagnostic levels in acute hepatitis, in which it is 10 to 15 times normal,[10, 11] whereas in sickle-cell anemia with crisis it is normal or slightly elevated in the serum[12, 13] or whole blood.[14] In no instance was serum glutamic oxalacetic transaminase found to be over 400 units. The mean serum glutamic oxalacetic transaminase in a series of 20 determinations in children with sickle-cell anemia was 42 units.[15]

The 2 patients reported here with known sickle-cell anemia were suspected of having viral hepatitis on admission. In the first patient the clinical history, physical examination and laboratory findings were compatible with either sickle-cell crisis or viral hepatitis. The extreme elevation of SGOT to 2,050 units in the absence of ingestion of hepatotoxic agents or acute hepatic hemodynamic changes suggested viral hepatitis. However, the sudden onset and severity of symptoms and the history of many sickle-cell crises favored the diagnosis of sickle-cell crisis. The rapidly rising serum bilirubin and the lack of clinical improvement under conservative regimen prompted the decision to use steroids. The serum bilirubin of 85 mg. was unusual. It is the highest we can find in the literature. The response to steroids was also remarkable. The patient became asymptomatic in 72 hours. There was a considerable drop of serum bilirubin in the first 3 days and a gradual but steady return toward normal of the liver function tests and SGOT in a period of 3 weeks.

The diagnosis in the second patient was made with less difficulty. The past history of blood transfusions, the insidious onset of symptoms, the enlarged tender liver, and, most important of all, the elevation of SGOT to 740 units all pointed to this diagnosis. We believe that the diagnosis of viral hepatitis in sickle-cell anemia can be established if the clinical history and physical findings are suggestive, there is no recent history of ingestion of hepatotoxins, and the serum glutamic oxalacetic transaminase is at least 10 times normal.

The liver biopsy specimens from our patients failed to reveal the characteristic changes seen in acute viral hepatitis. On the other hand, they both showed changes compatible with sickle-cell crisis. Assuming our clinical diagnosis to be correct, this lack of correlation with the histologic changes is difficult to explain. It might be assumed that the pathophysiologic effect of sickle-cell anemia would mask the effect of viral hepatitis on the liver. In the first case the 3-week delay from the onset of illness in obtaining a biopsy because of the marked elevation of bilirubin and the use of steroids may have been responsible for the absence of typical microscopic features. So far, we have not been able to find similar cases of sickle-cell anemia complicated by viral hepatitis having SGOT determinations and liver biopsies reported in the literature. Further observations on this will help to clear up this point.

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* Report of Dr. Hans F. Smetana.

Summary

Two patients with sickle-cell anemia in whom we made the probable diagnosis of viral hepatitis have been reported. One of them with marked hyperbilirubinemia was treated with steroids with defervescence and symptomatic relief.

The difficulty in establishing the diagnosis of viral hepatitis in a patient with known sickle-cell anemia has been emphasized. Elevated SGOT activity is of considerable importance in arriving at this diagnosis.

Liver biopsy in sickle-cell anemia complicated by viral hepatitis may not reveal characteristic changes as seen in acute hepatitis.

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Do You Have Journals for Exchange with Foreign Physicians?

Help is needed for the program of sharing medical journals with colleagues in dollar-poor countries. At present about 50 physicians are participating in this effort by sending 62 journals to 14 countries. Those American journals are much appreciated by the recipients and frequently the contact has also become stimulating and rewarding for the sender.

Efforts to disseminate knowledge of this opportunity have resulted in many recent personal letters. Fifty-five requests remain unmatched. About two-thirds of the letters express interest in a general medical journal such as the Annals of the D. C. Medical Society, the *Journal of the AMA*, or the *America Journal of the Medical Sciences.* A significant number of requests for specialty journals has also been received.

Mailing journals costs relatively little in postage or inconvenience. If no used journals are available, paying for a subscription is particularly useful. Willingness to help with this program should be communicated to the Journal Committee Chairman, Dr. Christopher T. Bever, Hobart 2-4300.

Diarrhea due to Candida Albicans—Sappington et al

(Continued from page 49)

Twenty-five were found to harbor *Candida albicans* in the stool or in the bowel exudate. In none of the 25 was there a coëxisting pathogenic bacterium or parasite, and no other cause for diarrhea could be found. All were treated with nystatin, 500,000 units, 4 times a day for a period of 10 days. Eighteen of the 25 (72 per cent) responded with prompt and lasting relief of the diarrhea. We believe that this demonstrates that the diarrhea was due to the presence of *Candida albicans* in the stools, since nystatin is a specific fungistatic agent.

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Current Trends in Rheumatology

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There is a tide in the affairs of men which taken at the flood leads on to fortune. . . . On such a full sea are we now afloat."[1] So did Brutus exhort his followers to take advantage of the wave of popular support in his fight against the slayers of Caesar. If there can be a parallel in medicine today, it would appear that we are on the verge of great victories in the fight to conquer the rheumatic diseases. Never has the medical profession indicated such interest in arthritis and related diseases as has been shown in the past decade. The second "Rheumatism Review"[2] which surveyed the American and English literature on this subject for 1934 contained only 389 references; the fourteenth "Rheumatism Review"[3] with a like summary of the literature of 1959 contained 1,213 references. The contrast is even more striking when the subject matter is reviewed. Twenty-four of the articles in the Second Review, or about 6 per cent, represented reports of experimental rather than clinical investigations, while 203, or more than 16 per cent, of the 1959 articles were in such a category. Titles such as "The Relationship between a Serum and Tissue Inhibitor and the Rheumatoid Disease Agglutinating Factor"[4] and "Quantitative Studies on the Hemagglutination Inhibition Reaction for Determination of the Gm Types"[5] are now common in the rheumatology literature and reflect the increasing experimentation into basic mechanisms.

With such a rapidly expanding volume of important literature to be consulted it is becoming more and more difficult for the physician to keep abreast of changes and trends unless he devotes his time exclusively to this field. The purpose of this paper is, therefore, to review briefly some of the newer discoveries and to outline the directions in which current thinking regarding rheumatic diseases is directed. Rather than to approach the problem by diseases it may be more appropriate to do so by subjects—the horizontal rather than the vertical approach.

Nomenclature

An appropriate place to start is nomenclature. Here the trend is toward descriptive terms, as in all medical terminology. "Rheumatism" and "rheumatic diseases"[6] are accepted as synonymous and are used to indicate the group of illnesses whose distinguishing characteristic is pain in the joints or their anatomically supporting structures. Rheumatology is "the science of rheumatism," while a rheumatologist is a "specialist in rheumatic diseases."[7] Turning to specific diseases, "systemic lupus erythematosus" has replaced "disseminated lupus erythematosus"[8, 9, 10] and "progressive systemic sclerosis" is preferred to "scleroderma."[11-14] In localized shoulder conditions "calcific tendinitis" and "adhesive capulitis" seem destined to supplant the more familiar "bursitis" and "frozen shoulder."[15, 16]

In one instance there is a trend against a descriptive term; the simpler (and older) "osteoarthritis" is more commonly used than the rather lengthy designation, "degenerative joint disease."[17, 18]

Probably the most dramatic change is the growing tendency of American rheumatologists to adopt the English and Continental term of "ankylosing spondylitis" to designate the condition formerly known as "rheumatoid spondylitis" or "Marie-Strümpell disease."[19-23] This reflects the thought that this condition is separate from peripheral rheumatoid arthritis despite the similarity of the synovitis and the coëxistence of the 2 diseases in a high percentage of cases.

The abbreviation craze which seems to be sweeping medicine has not passed this group of diseases. R.A., O.A., and S.L.E. are seen and heard frequently to indicate rheumatoid arthritis, osteoarthritis and systemic lupus erythematosus.[24]

Etiology and Pathogenesis

The basic etiology of all rheumatic diseases remains obscure except for those types known to be secondary to specific infections, but gratifying work is being done to solve this basic riddle in each form of rheumatism. Sokoloff[25, 26] has presented interesting experimental animal data which cast doubt on the long accepted "wear and tear" theory of the etiology of osteoarthritis. His work with various strains of mice would indicate a strong hereditary disposition to the disease and, indeed, a strong hereditary disposition in some strains to resist degenerative changes. Stecher's previous investigations[27, 28] would indicate that the animal data may also have human correlation.

The most significant trend under the heading of etiology, however, has to do with investigations of auto-immune reactions in rheumatoid arthritis and systemic lupus erythematosus. Ragan[29] in a detailed analysis of altered immunity in relationship to rheumatoid arthritis cautiously concludes that this is the most attractive theory of etiology yet advanced. He bases this on 2 premises: First, the chronic, apparently self-perpetuating nature of the disease implies either a chronic infection or autosensitization, and since he feels that the former cannot be supported the latter is suggested; and second, the ability of the rheumatoid factor to combine with its own naturally existent circulatory aggregated 7S gamma globulin to form a spontaneous precipitate is highly suggestive of auto-immunity. This interaction of rheumatoid factor with gamma globulin has also been discussed by Vaughan[30, 31]; in addition, he has cited the presence of fibrinoid and bound rheumatoid factor in the tissues as emphasizing the hypersensitivity state in rheumatoid arthritis.

Evidences for an altered immunologic mechanism are considerably stronger in systemic lupus. Here, antinuclear and anticytoplasmic factors can be consistently demonstrated.[32] In this same regard, an interesting overlap of auto-immune phenomenon has been reported as occurring in Hashimoto's disease, systemic lupus, and rheumatoid arthritis.[33] Furthermore, recent experiments have shown that heterologous film implants into the subcutaneous tissue will induce changes in the recipient quite similar to rheumatoid nodules, apparently due to the activation of a hyperimmune reaction.[34]

The significance of these studies was emphasized by the presentation of the 1960 Nobel Prize in Medicine to Burnet and Medawar for their fundamental contributions to the understanding of the auto-immunization phenomena. However, the absence of clinical allergic states in the rheumatoid arthritic and the apparent antithetic relationship between this disease and classic allergic conditions such as asthma and hay fever is a strong argument against rheumatoid arthritis being an allergic condition.[35]

Furthermore, the occurrence of rheumatoid arthritis in patients with agammaglobulinemia is extremely difficult to reconcile with such a theory. Rotstein and Good[36, 37, 38] have reported 37 cases of agammaglobulinemia with rheumatoid arthritis or diffuse mesenchymal disease in 33 per cent. He feels that this indicates an infectious etiology. Svartz,[39, 40, 41] experimenting with the production of the rheumatoid factor at the King Gustav Institute in Sweden, has also concluded that the infectious theory remains an exceedingly attractive one. Thus, 24 years after Hench[42] summarized in great detail the arguments for and against the infectious etiology of rheumatoid arthritis the matter is far from settled.

In the closely related subject of pathogenicity, Seegmiller's work[43] on gout would seem to have formed a significant completion in an important cycle. It is self-evident and has been appreciated for some time that the hyperuricemia present in the gouty state must result basically from either overproduction or underexcretion of uric acid.[44] In 1952, through the use of isotopically labeled glycine, it was shown that some gouty patients form uric acid by direct endogenous biosynthesis from precursors such as glycine, CO_2 formyl groups, and the nitrogen of glutamic and aspartic acid.[45, 46] However, since this mechanism could not be demonstrated in all cases of gout, impaired excretion was suspected. Seegmiller has now shown that decreased urate clearance is indeed present in some cases despite the absence of other evidence of renal damage. It thus appears that either one or possibly both mechanisms may be active in a particular case.

The paradoxical action of salicylates in gout has only recently been appreciated.[47] It now seems evident that small daily doses (3 Gm. or less) may act to retain uric acid, while large doses (5 Gm. or more) exert a uricosuric effect. For this reason it seems wise not to use aspirin as an analgesic unless it is being used in full uricosuric doses.

Pathologic Features

Although not as "new" as some of the other facts in this paper, the appreciation of some of the early pathologic changes in osteoarthritis is relatively modern. We formerly spoke of erosion and fibrillation of the cartilage as the earliest changes. It now appears that these changes are themselves secondary to edema and swelling of the cartilage cells and chondromucoid softening of the matrix. Whether the original lesion is located in the chondrocytes, the fibrous proteins, the unformed matrix, or elsewhere has not been determined. Osteophyte formation which appears later in the condition has been shown to be a reactive bony hyperplasia secondary to cartilage deterioration.[48]

The most significant recent pathologic advance in rheumatoid arthritis is the appreciation of the "multi-system" nature of the disease. Rheumatoid lesions have been found in every system of the body including the heart valves and brain meninges.[49, 50] The frequency of such findings has led to the suggestion that the term "rheumatoid disease" should supplant "rheumatoid arthritis."[51] To date this has had very limited acceptance.

In this same category should be mentioned the recognition of peripheral neuropathy as a not infrequent accompaniment of rheumatoid arthritis.[52-55] Inflammatory infiltration into the nerves apparently is the cause of the numbness and paresthesia so many patients experience. The rheumatoid lesion, moreover, seems to be primarily a vasculitis,[56, 57] and indeed, the rheumatoid nodule itself is primarily a necrotizing vasculitis followed by granuloma formation.[58]

The pathologic nature of the vertebral changes giving rise to the X-ray appearance of bambooing in ankylosing spondylitis is apparently different from the teachings of a decade ago when it was believed that this was due to calcification of the lateral ligaments.[59, 60] However, anatomic studies indicate that no true lateral ligament exists.[61] It now appears that the change is due to ossification of the annulus fibrosus of the intervertebral fibrocartilage.[62] Reactive hyperplasia of the adjacent vertebral bony margins may also be a part of the picture.

The recognition of characteristic pathologic changes in the scleroderma kidney has also taken place in comparatively recent years. There are 3 changes: (1) intimal proliferation of small intralobular arteries and arterioles; (2) fibrinoid necrosis of walls of afferent arterioles and sometimes of a glomerular loop, and (3) focal cortical infarcts.[14, 63, 64, 65]

This would seem to be the place to mention lupoid hepatitis.[66-70] The distinctive feature of this recently recognized entity is a postnecrotic cirrhosis occurring in persons who present clinically a multisystem disorder compatible with systemic lupus and who in life demonstrate positive lupus blood preparations. Postmortem changes, however, are singularly normal except for the liver changes.

Symptoms

Although it would hardly be accurate to say that "new" symptoms have been discovered or described, we can list new groupings and new significance of old symptoms. Thus vocal hoarseness or an expiratory stridor as a symptom of rheumatoid involvement of the cricoarytenoid cartilages has only recently been appreciated.[71]

Two syndromes similar to rheumatoid arthritis have been more carefully studied and described. In Reiter's syndrome it has been shown that the classic triad of urethritis, arthritis and conjunctivitis may not always be present together at the start of the disease; indeed, one or the other may be delayed many months. The frequency of balanitis as well as dermal lesions on the hands and feet has also been shown. Considerable interest has recently been demonstrated in the X-ray changes in the lumbar spine. Paravertebral calcifications as well as changes in the sacro-iliac joints are sometimes seen and have been thought to be characteristic of the disease.[72-75] Bunim's detailed studies of Sjögren's disease[76] have demonstrated a close immunologic link with rheumatoid arthritis, even in those cases in which articular symptoms are minimal or absent.

Recent studies of juvenile rheumatoid arthritis have emphasized that this disease can present a wide variety of symptoms and that only a small percentage of cases progress to the severe crippling with unequal bone lengths commonly referred to as "Still's disease."[77, 78] Yet this is not new; it is only a rediscovery of an original truth. In 1897 George Frederick Still[79] (at age 29) published a paper entitled, "On a Form of Chronic Joint Disease in Children." He pointed out that rheumatoid arthritis in children presented itself in such different ways as to suggest that more than one disease was present. The increased interest in this condition appears to reflect an increase in the incidence of rheumatoid arthritis in children.

Interesting observations have been made of the symptoms of osteoarthritis in recent years. There was a time when it was popular to speak of primary and secondary osteoarthritis,[16, 80] the former being the idiopathic accompaniment of advancing years and the latter being the result of trauma. This differentiation is now stressed less.[81] It is usual today to point out that osteoarthritis is clinically and pathologically limited to one, or a few joints.[18] There are cases in which the condition is widespread and may be accompanied by inflammatory signs and symptoms. Kellgren[82] of England has suggested the term "primary generalized osteoarthritis," and this is now used commonly in this country.

I have been interested in the fact that many cases of osteoarthritis of the fingers involve the proximal interphalangeal as well as the distal interphalangeal joints and are accompanied by inflammatory reaction; in time true ankyloses may develop. I have suggested the term "interphalangeal osteoarthritis"[83] to indicate that this entity is distinct from the usual asymptomatic condition of finger joints known as Heberden's nodes.[84]

Laboratory Aids in Diagnosis

The laboratory test which has attracted the greatest attention in this field during the past 10 years is the Rose-Waaler differential agglutination test for rheumatoid arthritis. Essentially, this test measures the peculiar ability of serum from rheumatoid patients to agglutinate a wide variety of particles, including sheep cells, latex, or bentonite clay. The test is more sensitive when the particles have been coated with human globulin.[85, 86, 87]

Despite extensive investigation, the exact significance of the "rheumatoid factor" responsible for this test is uncertain.[88, 89] That it cannot cause rheumatoid arthritis would seem proved by the absence of the disease in volunteers following transfusions of blood containing this factor in high titer.[90] Svartz claims that the factor cannot be an antibody, since it cannot be completely absorbed by sensitized sheep cells. She feels that it is produced by enzymatic processes and states that these are probably initiated by microörganisms which in turn are the cause of the disease. In her attempts to produce the rheumatoid factor experimentally she has had greatest success by injecting into white rats group B streptococci grown from the nasopharynx of rheumatoid arthritis patients.[91] It has been suggested that the rheumatoid factor may be a genetically determined index of some inherited metabolic defect which predisposes to the development of rheumatoid arthritis.[92]

Despite the obscure nature of the factor much has been learned of its physical characteristics. It is known to be a macroglobulin—apparently a combination of 2 factors which can be distinguished by their ultracentrifuge constants.[93] Thus, a single large 19S globulin believed to be the antibody is apparently surrounded by 5 to 7 smaller 7S globulins thought to be antigen, the combination resulting in a globulin of 22S characteristic.

From the clinical standpoint the rheumatoid factor is also of interest. At least 80 per cent of cases of classical rheumatoid arthritis will show a significant titer of the factor. Positive tests are most common in patients with nodules and are more frequent in males than in females. On the other hand, the percentage of positives falls as the diagnostic criteria become fewer in cases of suspected disease. It has been suggested that the test is negative in many early cases.[92, 94-97] However, the factor is found in about 5 per cent of the asymptomatic population but in almost twice this number in the asymptomatic blood relatives of seropositive rheumatoid arthritics.[91]

It is interesting that the test shows a high per cent of positivity in Sjögren's disease,[98, 99] but a low per cent in other so-called variants of rheumatoid arthritis, psoriatic arthritis, juvenile rheumatoid arthritis, and ankylosing spondylitis.[100, 101] Other collagen diseases, particularly systemic lupus, may demonstrate the rheumatoid factor in about 20 to 30 per cent of cases.[102, 103]

Much interest has recently been demonstrated in just where the rheumatoid factor is generated. Fluorescent antibody technics demonstrate a high percentage of the factor in the plasma cells of rheumatoid synovial villi but not in plasma cells elsewhere, suggesting elaboration at this point.[104] The high titer found almost without exception in cases demonstrating rheumatoid nodules has led to the suggestion that the factor may be generated in these nodules.[105]

Mention must also be made of the "gm groups." These are the hereditary gamma globulin groups with which rheumatoid factor reacts. Of extreme complexity, their full significance has not yet been established. At present they seem to be of particular interest to the geneticist.[106]

An interesting new variation of the test for the rheumatoid factor is that using fluorescent technics.[107] Both gross and microscopic tests are being used and promise to add immeasurably to our knowledge. In this test, fluorescein isothiocyanate is conjugated with fraction II of human gamma globulin. This is then used to coat the particles, either sheep cells or bentonite, which will be aggregated by the rheumatoid factor. When viewed by ultraviolet light the resultant fluorescent serum or cells are strikingly demonstrated.

It would also be appropriate to mention examinations of the synovial fluid. Although no one has added anything to the monumental work of Ropes and Bauer[108] almost 10 years ago (except in gout which will be mentioned later), nevertheless it is only recently that rheumatologists have been taking synovianalysis seriously. Cell counts and mucin clot tests are being performed with increasing frequency, and their value as an aid in diagnosis appears to have been more thoroughly appreciated. The results are still somewhat nonspecific, however.[109]

In one instance a new look at the synovial fluid offers particular help in diagnosis. This is in cases of acute gout in which uric acid crystals may frequently be identified. Visualization under polarized light is often helpful, but many of the crystals can be observed from direct smears of synovial fluid. Caution must be used, because calcium crystals may appear in the synovial fluid of certain cases of osteoarthritis and cause confusion.[110, 111]

Roentgenography

New observations have been presented that a significant proportion of patients suffering from psoriatic arthritis[112] and Reiter's syndrome demonstrate roentgenographic changes in the sacroiliac articulations which may be difficult to distinguish from ankylosing spondylitis. Further studies are indicated.

Two changes of significance have recently been pointed out in rheumatoid arthritis. The first is the early changes which may be seen at the head of one or more metacarpal bones at a point corresponding to the insertion of the synovial membrane.[113] Here there may appear a small area of bone atrophy commonly referred to as a "hook erosion" (figure 1). The other "newly discovered" changes are those in the cervical spine which Martel[114, 115] at Ann Arbor has shown may sometimes develop. These are of two types: changes in the apophysial joints with degeneration and erosion of the articulating facets, and weakening of the ligamentous structures which can give rise to changes seen in the lateral views of the cervical spine when taken in full flexion and full extension. With the intervertebral ligaments weakened, there may be irregular motion of the vertebrae on flexion, and the roentgenographic appearance has been termed "stair stepping." With relaxation of the alar and cruciate ligaments, the odontoid process may demonstrate unusual motion on flexion (figure 2).

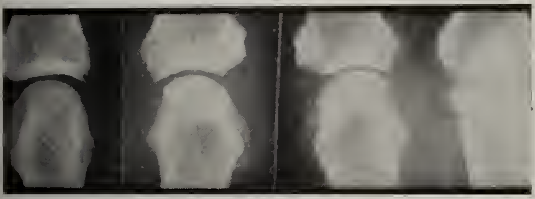

FIG. 1. Proximal interphalangeal articulations showing progressive changes from normal on the left to increasing cartilage loss toward the right. Extreme right shows "hook erosion."

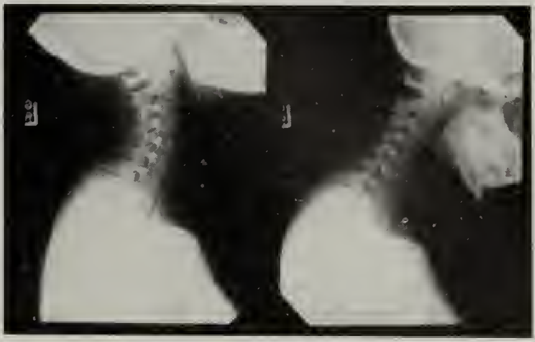

FIG. 2. Changes in the cervical spine showing "stair stepping" and excessive excursion of the odontoid on flexion of the neck.

Finally, I have had the opportunity of demonstrating that ankylosing does take place in severe cases of osteoarthritis of the fingers—interphalangeal osteoarthritis."[83] When this occurs it is different from that usually seen in rheumatoid arthritis because the phalanges do not show the prominent osteoporosis nor the bone absorption at articulating edges with subluxation so common in the rheumatoid diseases. Rather, the ankylosed joint presents a smooth, even appearance (figure 3).

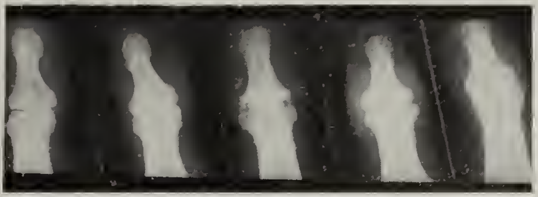

FIG. 3. Progressive changes in the distal interphalangeal articulations occurring in osteoarthritis with progressive narrowing of cartilage, osteophyte formation, and eventual ankylosis.

Treatment

We have thus arrived by a rather circuitous route at the crux of the situation so far as the patient is concerned, namely, the matter of treatment. Unfortunately, it will not take long to discuss this, since there has appeared very little new under the sun.

A double-blind study in a group of clinics in Great Britain has shown that intramuscular gold is indeed an effective remedy in rheumatoid arthritis and is not of psychologic value only.[116, 117] Chloraquine sulfate and hydroxychloraquine phosphate also have been established as useful therapeutic modalities in selected cases of rheumatoid arthritis.[118, 119]

So far as steroids are concerned, the physician now has his choice of 10 different formulae: cortisone, hydrocortisone, prednisone, prednisolone, methylprednisolone, fluprednisolone, paramethasone, triamcinolone, dexamethasone, and betamethasone. There are subtle differences to each in the patient's reaction, but from the standpoint of therapeutics and toxicology all are essentially the same, with the synthetics probably to be preferred over the natural steroids.[120-126]

Prednisone and prednisolone are presumably the most reliable drugs to be used for routine treatment, the others being reserved for those patients who respond poorly or lose therapeutic effectiveness.

Perhaps the only truly new item in steroid therapy is the apparent beneficial effect of steroids on lupus nephritis. There is impressive evidence that prompt and adequate treatment of this formerly fatal complication may reverse the changes and bring about a cure, at least in some cases.[127, 128]

Interesting progress is being made in the nonmedical treatment of these diseases, particularly rheumatoid arthritis. Rehabilitation of the seriously crippled arthritic is receiving increasing attention. Many persons previously condemned to a lifetime of institutional care are being returned to useful activity. Such a program requires close supervision of all physicians concerned; it includes properly regulated rest and exercise, judicious splinting, self-help devices, home physical therapy, and continuing optimistic encouragement from the team of physicians.[129-136]

In the surgical approach to the arthritic problem monumental work has been accomplished. Two epochal discoveries preceded the work of surgical correction. Both are so simple and logical that one wonders how the identification of the underlying lesion was delayed so long. The first was determining that the drop finger of rheumatoid arthritis is due to a torn extensor tendon, most frequently frayed (or tattered) at the dorsum of the wrist by arthritic changes there.[137] The second was the realization that ulnar deviation (or "ulnar drift") is due to disintegration of the extensor tendon pulley mechanism at the metacarpophalangeal articulation.[138]

Once the mechanism by which these changes came about was understood, the theory of correction immediately followed—surgical repair. In practice this has been rather difficult, since essentially new operations have had to be devised. However, tremendous advances in this field have taken place and the surgeons are moving forward rapidly.[138-145] In addition, prosthetic insertions in the proximal interphalangeal joints to correct flexion deformities have been accomplished.[146]

During the past 5 years great progress has been made in rheumatology. It is indeed encouraging that momentum has increased as well as interest. A recent editorial in the *Journal of the American Medical Association* was entitled "Rheumatology—Specialty with a Future."[147] This is indeed true. And also for some it has had an illustrious past and a rewarding present.

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PRESIDENT'S PAGE

WHERE DO YOU STAND?

Pericles was recently quoted in *Life* as having said: "We do not say that a man who takes no interest in politics minds his own business. We say he has *no business here at all.*" One may argue as to the accuracy of the quotation but not with the sentiment. This utterance of 2500 years ago holds today just as surely as then for all competent men. Can there be any question that members of the medical community are such?

The political campaigns around the elections of November 1962 did not end there. The losers began to pick themselves up and plan for 1964. The winners, knowing this, must be as foreminded, if not more so. We are all deeply involved in this, individually or collectively, whether we face it or not.

Most of us cannot, as a few physicians have done, run for elective offices in local and national elections. Nor can many of us help enough with the indispensable precinct work to make our weight felt as much as it should. The result has been abdication of a tremendous portion of political heritage by a distressing proportion of doctors of medicine whether enfranchised or not. There is a way to greatly augment one's political impact if one has a vote or to become an influential person even if he does not.

By contributions of funds to the party or candidate of your choice you can wield a weapon of incalculable force, especially if the contributions are made every year and in a significant amount. The regular contributor on an annual basis is the backbone of any organization dependent upon voluntary support. What factor, aside from your livelihood, looms larger than political climate in your life?

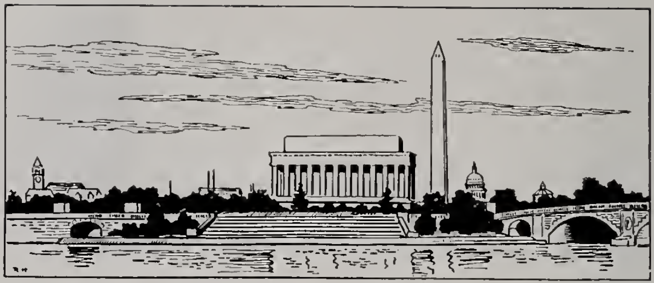
This is not to suggest that you give blindly or indiscriminately. Choose your party or your candidate thoughtfully and change either if you don't like the results. The impact of an openly made switch can be highly potent unless it is obviously based on disappointment over hope for personal gain.

For the many to whom I am sure this is an untried modality and who might accept a suggestion, may I submit the answer of organized medicine to their dilemma. The American Medical Association has fostered an independent political action committee, AMPAC (American Medical Political Action Committee). This step was indicated by the fact that organized labor was using this tactic in opposing medicine on critical matters.

Not to overdo quotations from the Golden Age, but Socrates said: "The unexamined life is not worth living." We have the spectacle of a prominent physician donating generously to charities and consigning his donations to people mostly unknown to him while he shreds off $10.00 to a vital political campaign. Now I ask you!

You are urged to increase your political campaign contributions to a level commensurate with your stake in the issues, and, if you have not contracted this habit, to do so in a big way now.

RCCorley



EDITORIALS

Grief*

GRIEF AND MOURNING are an inevitable experience of everyone. Death and separation are a part of normal life experience, but they constitute a source of suffering, sometimes illness, and in any case require on the part of the mourner an effort at finding a new way of life and relating himself to others in a new manner. Throughout the ages grief and mourning have been the concern of philosophers, priests, and the churches. It is only recently that the medical profession has become concerned with it. For the last two decades a good deal of evidence has accumulated indicating that grief and separation reactions may contribute to nervous disorders and even to certain forms of physical disease, the psychosomatic illnesses. Dr. Lindemann undertook a review of the normal and of the pathologic reactions to bereavement. He stressed the importance of an opportunity for feeling and expressing sorrow and of the opportunity for working through the loss and for replacing the kinds of activities which previously were shared with the person who is now lost. He then enumerated a number of psychoneurotic conditions and of personality changes which have been observed in consequence to severe bereavement.

This review led to a consideration of the important part which both the clergy and the medical man play in avoiding the dangerous reactions to bereavement and in helping the mourner to adapt in a healthy way to such a major life crisis. He stressed the importance of avoiding prolonged separation from the mother in young children, who are especially vulnerable to even a temporary loss, and elaborated on the coöperation between physician and clergyman at the time of a terminal illness, such as cancer, when the family has to be prepared for the loss of a dear member.

He closed with a discussion of many events in the community which lead to forced separation of families and of groups of individuals who have become dependent on one another. The great population mobility, the tendency to migrate, and particularly the problems relating to urban renewal and redevelopment can be approached as crises of transition from one life situation to another, from one set of human relationships to another, and from one set of roles, which one plays, to another. What has been learned about grief-work can be applied to such situations. Both physician and clergyman can help people involved in such transitions if they understand the psychologic reactions. Furthermore, both physician and clergyman can contribute to the prevention of more serious consequences of maladaptive reactions to such life crises by alerting those persons who are responsible for major changes in the community, such as city planners, to the possible serious hazards to the mental health and even to the physical well-being of those who have not been adequately prepared for forced separations and relocations.

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* Summary of the Second Edward Young Davidson Lecture on Religion and Medicine, presented by Erich Lindemann, M.D., Professor of Psychiatry, Harvard Medical School, before the Medical Society of the District of Columbia in Washington, D.C., November 8, 1962.

Opinions expressed in contributions to the Editorial Section are those of the writers and do not necessarily reflect the views of the Medical Society of the District of Columbia

Professional Disability Plans

D. C. Plan	**AMA Plan**
Begins benefits after 1 week, for sickness (first day in hospital) and from first day for disability due to an accident.	Begins benefits after one year.
Benefits paid for 5 years for sickness and for life for disability due to an accident.	Benefits paid for life on sickness and for life for disability due to an accident.
All members under 70 may apply.	All members under 70 may apply.
No age termination for benefits, once a member is enrolled.	No age termination for benefits, once a member is enrolled.
No reduction of benefits because of increased age.	Sickness benefits reduce to ½ at age 70, and to ¼ at age 75.
Level premiums which do not increase with attained age.	Premiums increase at age 40, 50, and 60.
Waiver of premium after 3 months of disability.	Waiver of premiums after 1½ years of continuous disability.
Disability defined as "total and continuous disability and the inability of the insured to practice in his or her specialty of medicine or surgery."	Disability defined as "disability which wholly and continuously prevents the insured from performing the duties of his occupation, for first 10 years—thereafter, from engaging in any suitable occupation or employment for wage or profit for which he is qualified by reason of prior education, training, or experience."
Payments for partial disability due to accident up to 6 months at ½ weekly benefit rate.	None.
Accidental Death and Dismemberment—$1,000.00.	None.
Each recurring disability treated as a new claim and paid as such.	Any recurring or new disability after a doctor has returned to practice 6 months requires the original 1-year waiting period.

Level Benefits Monthly Benefits	*Level Rates Annual Rates*
$216.00	$94.00
433.00	186.00
650.00	278.00

Monthly Benefits	*Under Age 40*	*Ages 40–49*	*Ages 50–59*	*Ages 60+*
$500.00	$90.00	$110.00	$130.00	$150.00
750.00	135.00	165.00	195.00	225.00
1,000.00	180.00	220.00	260.00	300.00

Joseph E. Jones, Administrator of our Group Disability Income plan, in coöperation with Mutual of Omaha Insurance Company has just announced that the benefits under our program soon will be *expanded*. The expanded benefits will include the following: (1) maximum weekly benefits increased from $150 to $225, and (2) sickness benefits extended from 5 years to 10 years. More information will be forthcoming soon.

D. C. Hospital and Related Facilities

For whatever it is worth, the latest Hill-Burton State Plan Data Report of the U. S. Department of Health, Education, and Welfare shows the District of Columbia as rating high in nearly all Hill-Burton categories of hospital beds as of January 1962.

	Total No. Needed	Total Existing	Total Acceptable	Per Cent of Need Met by Acceptable Beds
General Hospital Beds	4,317	4,317	4,317	100
Long-term Care Beds	3,720	1,426	1,426	38.3
Mental Hospital Beds	4,633	5,980	3,906	84.3
Tuberculosis Beds	663	663	663	100
Public Health Beds	3	1	1	33.3
Auxilary Public Health Facilities	29	29	29	100
Diagnosis and Treatment Centers	12	12	12	100
Rehabilitation Facilities	—	22	17	—
Comprehensive Rehabilitation Facilities	9	8	8	1

As of January 1962 the District, in beds per 1,000 population, stood first in general hospital beds, twelfth in long-term care beds, and was tied for fifteenth place in mental hospital beds. These figures do not convey the full impact of this report but serve to show something of the status of hospital bed need in the District of Columbia.

Clinical Pediatrics

A new publication, this one in the field of pediatrics, has reached the editorial offices of the MEDICAL ANNALS. Published by the J. B. Lippincott Company, of Philadelphia, *Clinical Pediatrics* will be issued monthly. Dr. Irving J. Wolman, Professor and Chairman, Department of Pediatrics, University of Pennsylvania Graduate School of Medicine, is the Editor-in-Chief.

The first issue of C P (October 1962) has an attractive format, with 72 pages devoted to scientific articles, including a section on Clinical Rounds from Roosevelt Hospital in New York City. A section, Annotated Abstracts of recent articles in the literature, is edited by Dr. Roland B. Scott, head of the Department of Pediatrics at Howard University College of Medicine and a member of the Medical Society of the District of Columbia. Dr. Scott has devoted his October section to the subject, "Recurrent Epistaxis in Allergic Children."

In addition to color on the inside, CP has a colorful outside, which is bound to attract the attention of "small fry" in any pediatrician's home or office. The cover design is either a child's drawing or an artist's conception of a child's drawing. It depicts a little girl astraddle a horse, with the reins in one hand and an umbrella shielding her from the sun in the other. Included in the design are such miscellany as a dog, a butterfly, a bird, a tree, flowers, and a snake in the grass. The Editorial Board of the MEDICAL ANNALS welcomes this new publication to the field of medical literature and hopes that the last creature mentioned is not an ominous symbol.

Is This a Good Question?

Since 1950 the American College of Chest Physicians has offered three cash awards to undergraduate medical students throughout the world. The essays may be written on any phase of the diagnosis and treatment of chest diseases (cardiovascular or pulmonary).

With its official notice of the 1963 contest, entries for which close April 1, 1963, the College announced the 1962 prize-winners. The first prize of $500 went to Richard J. Lewin of the University of Southern California. The second and third prizes, $300 and $200, were captured by foreign students, one from Lima, Peru, and the other from Edinburgh, Scotland. For Honorable Mention, two were students of Western Reserve University School of Medicine, in Cleveland, and the third from the Leiden University Faculty of Medicine, of Holland.

Since World War II the United States has considered itself the Medical Center of the World. In a contest sponsored by an organization which calls itself international in scope but has headquarters in the United States and all its officers residents of the States, it is puzzling to note that half of the award winners and two of the three top essayists were products of foreign faculties. How come?

A. L. E.

Report on 1962 Clinical Meeting of AMA House of Delegates*

The Los Angeles Clinical Meeting was marked by the delay in action of several items which will again come before the House of Delegates in June 1963. Items so deferred included the following:

1. Compensation of Interns and Residents. This was deferred to obtain a wider discussion on state and county levels before action is taken.
2. Questions relating to physician ownership of drug stores, drug repackaging houses or drug companies, as well as the dispensing of glasses by ophthalmologists were all delayed for further study.
3. In June 1962 the House of Delegates voted to expand the Board of Trustees of the AMA, with such expansion to take place after a change in the Constitution and By-laws of the Association. This amendment failed to pass the House by the necessary two-thirds vote of those registered (although two-thirds of those voting voted for it) and so has been deferred until June 1963 when it will be the first item of business.
4. Proposed changes in the scientific program of the AMA were referred for study and report in June 1963.

Accomplished at the meeting was the passage of the following:

1. A statement of opposition of the Social Security type of legislation and support for Kerr-Mills with suggested liberalization of requirements for its use.
2. Endorsement of 4 proposed changes to the Internal Revenue Service Code which would liberalize medical expense deductions for those over 65 years of age.
3. Reaffirmed the position of the House of Delegates of June 1961 whereby it was stated that the profession will be responsible for the medical care of all patients who need it regardless of ability to pay.
4. Stated that at least 25 per cent of the total house staff of hospitals should be graduates of accredited Canadian or American medical schools and that failure to maintain this level for 2 successive years would warrant serious consideration toward disapproval of such hospitals for internship training.
5. Asked the Board of Trustees to use all its influence to eliminate diagnostic and treatment centers from consideration under the Hill-Burton Law.
6. Urged the continued aggressive development of Blue Shield senior citizens' programs.
7. Approved Essentials of Schools for Inhalation Therapy Technicians, Cytotechnology and Medical Technology, and of Pediatric Cardiology Residencies.
8. Authorized study and a report in June 1963 of the possibility of a pension plan under the Keogh Bill.

The Executive Board of the D. C. Medical Society should give consideration to Item 1 above, Compensation of Interns and Residents. The impact of this subject on the members of this Society cannot be gauged until details of the plan are clear, but it is the feeling of the undersigned that letters should be directed to the various hospitals, especially to the Chief of Staff, calling his attention to this subject and requesting an expression of feeling. This would make certain that Society members are aware of this proposal and would furnish the Board with the trend of thinking among our members.

Respectfully submitted,
C. Willard Camalier, Jr., M.D., *Delegate*
Clifton R. Gruver, M.D., *Delegate*
George W. Cooley, *Secretary*

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* This report is a summary of actions of the House of Delegates which met during the 1962 Clinical Meeting of the American Medical Association in Los Angeles, California, November 26–28, 1962.

AAMA Commended by AMA

At the 1962 Clinical Meeting of the American Medical Association in Los Angeles, the House of Delegates, on November 28, passed the following resolution:

"Whereas, The American Association of Medical Assistants has as its objectives basically the same purposes as the American Medical Association; and

"Whereas, The American Association of Medical Assistants has, in its short span of 6 years' growth, rendered inestimable services not only to the people of America but also to the medical profession; and

"Whereas, The potential for growth and service of the American Association of Medical Assistants is recognized by the American Medical Association; *therefore be it*

"*Resolved*, That the American Medical Associa-

D. C. CANCER SOCIETY HONORED: Dr. John R. Heller (left), President of the Sloan-Kettering Cancer Center, New York, and representing the national Board of Directors of the American Cancer Society, presents a national honors citation to Dr. Alfred A. J. Den, former Chairman of Professional Education of the D.C. Division of the American Cancer Society. The citation recognized the outstanding program in the District of Columbia devoted to cancer education for physicians, nurses, dentists, medical students, and other professional personnel. The presentation took place, November 29, 1962, at the semi-annual meeting of the Board of Trustees of the District Cancer Society.

tion express to the American Association of Medical Assistants its sincere appreciation for the dedicated and unselfish assistance and work in the combined goal of the 2 organizations in continually striving to improve the character of medical standards; *and be it further*

"*Resolved*, That the American Medical Association wholeheartedly endorse the program and functions of the American Association of Medical Assistants and encourage every physician who has in his employ or under his supervision medical assistants who are eligible for membership in the American Association of Medical Assistants to urge all these assistants not only to join the American Association of Medical Assistants but to actively participate in their programs."

Why King-Anderson?

The Social Security Program began in 1937 with high hopes of reducing the number of older people on public roles. Today it is referred to as "insurance" or "social insurance"—a way to save during working years for the retirement years. Yet, according to reports, it has operated in the red 4 out of the past 5 years, losing almost 1¾ billion dollars in 1959, and owes present beneficiaries and those now contributing some $300 million more than is now in the fund.

Yet the New Frontier group wants to compound the Social Security fund problems by adding a medical care program. Social Security is not insurance, never was, and probably never will be. Every Congressman and Senator should be asked to explain "Why King-Anderson?" in the face of economic facts.

Proctology Teaching Program—Preceptorship Technique

A SPECIAL TEACHING PROGRAM, to give physicians an opportunity to learn the technique of proctoscopy, was initiated in January by the American Cancer Society in the District of Columbia, according to Dr. Alejandro F. Castro, Chairman of the Physicians' Committee for Education.

The program will be conducted in coöperation with George Washington, Georgetown, Freedmen's and D.C. General Hospitals and the Washington Hospital Center and will permit interested physicians to make an appointment at the time and date of their choice.

The program itself will take approximately 2 hours and will include orientation, demonstration of instruments, positioning, etc., clinical experience and discussion. At a later date a repeat proctoscopy will be performed. The American Academy of General Practice will give their members credit for attendance.

Purpose of this new program is to increase the early detection of cancer of the colon and rectum by encouraging more physicians to use the digital and proctoscopic examinations for the annual health checkup. The professional program is closely related to the comprehensive public education activity of the local Cancer Society, which is showing a film, "Life Story," on cancer of the colon and rectum to thousands of persons in the Washington area. Although potentially cancer of the colon and rectum is highly curable, each year more than two thirds of such patients die of this disease. Many could be saved by proper medical treatment if the disease was found by annual examination in its presymptomatic and most curable stage.

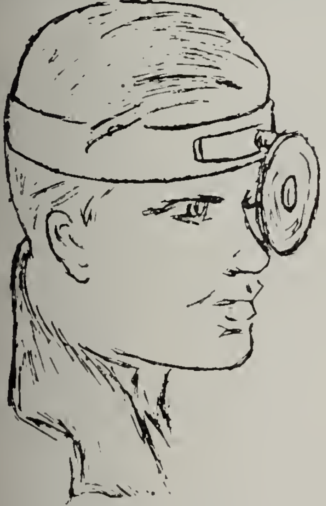
Physicians can obtain detailed information about the teaching program by calling the D.C. Cancer Society at Executive 3-3690.

DOCTOR!!!

REMEMBER, in neoplasms of the oral cavity

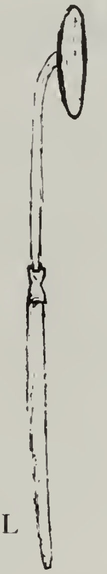
1. Leukoplakia is precancerous.
2. Biopsy of suspicious lesions is mandatory.
3. Cervical adenopathy may be the first sign.

Instruments needed for thorough examination of the oral cavity are



HEAD LIGHT

GLOVE



LARYNGEAL MIRROR

Any persistent hoarseness, cough, or difficulty in swallowing should be investigated.

A film, "Oral Cancer: The Problem of Early Diagnosis" is available for showing to physicians

RESEARCH
EDUCATION
SERVICE

Call or Write

AMERICAN CANCER SOCIETY
DISTRICT of COLUMBIA DIVISION, INC.
810 - 18th Street, N.W.
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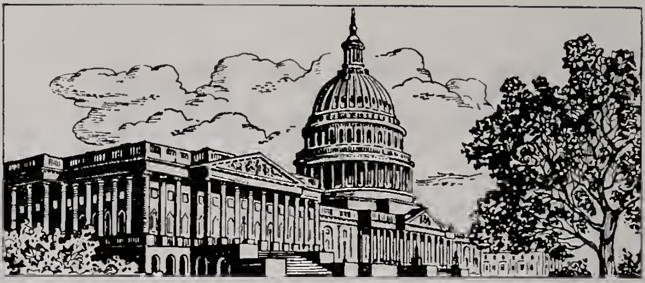


NEWS & PERSONALS

Meetings

The St. George Society of Medical Students has scheduled 2 meetings for March, both in the auditorium of the D. C. Medical Society. On March 4 Dr. George T. Pack will discuss "The Problem of the Pigmented Mole and Malignant Melanoma." Dr. Pack is Attending Surgeon at the Memorial Cancer Center in New York City and Associate Professor of Clinical Surgery at Cornell University School of Medicine.

Captain Thomas E. Cone, Jr., Chief of Pediatric Service, U. S. Naval Hospital, will be the guest speaker, March 26; his subject, "The Scourge of Childhood Cancer: Second Killer of Our Children."

A social hour will follow each meeting. All medical students, physicians, nurses, and other medical personnel are cordially invited to attend these meetings.

Physicians are invited to attend the **31st Annual Postgraduate Clinic of the District of Columbia Dental Society,** which will be held at the Shoreham Hotel, March 10–13, 1963. The official program may be secured from the Society's offices at 1835 Eye Street, N.W. (6).

Boards & Committees

The Executive Board of the Medical Society of the District of Columbia met, December 17, at the home of Dr. James W. Watts, who presided over the meeting. Those present were Drs. J. Spencer Dryden, Karl C. Corley, Duane C. Richtmeyer, W. LeRoy Dunn, Victor R. Alfaro, Raymond T. Holden, Frank S. Pellegrini, Naomi M. Kanof, C. Willard Camalier, Jr., and George W. Cooley, Secretary.

The following subjects were discussed:

Report on AMA House of Delegates: The Executive Board discussed a Report on the Clinical Session presented by Drs. Camalier and Clifton R. Gruver, which delineated some of the more important activities of the House. In reference to the special Report on Compensation of Interns and Residents, since action by the House had been postponed until the June Session, it was voted that a subcommittee of the Executive Board be appointed to seek the viewpoints of members of the Society regarding this Report through the various hospital staffs, specialty societies, and Sections.

Committee Appointments: Dr. Karl C. Corley, incoming President, presented nominees for the various committees. These were approved with the understanding that the final draft will be sent to each member of the Board prior to publication.

Editorial Board of the Annals: The makeup of the Editorial Board was discussed and it was agreed to establish terms of offices for the members. Dr. Naomi Kanof was added to the present membership of the Editorial Board.

Committee on Insurance: In view of the study and work to be done in developing programs under Public Law HR-792 (Keogh Bill) it was voted that the Committee on Insurance be made an Ad Hoc Committee for the special purpose of considering and developing such programs.

AMA Mental Health Program: On recommendation of the Committee on Mental Health the Board voted that the AMA Program on Mental Health be officially endorsed by this Society.

American Association for United Nations: In response to a request that this Society become a member of the above Association, the matter was discussed at length. It was agreed that no action be taken on this request since the American Association for U. N. is not related to medicine.

Budget for 1963: A revised detailed budget for 1963 was reviewed and approved as presented by the Secretary.

Committee Activities: The following committees were reported as having met during the months of November and December:

November	1	Review Board for Prepaid Medical Care Benefits
"	14	Annual Business Meeting
"	16	Public Information and Education
"	20	Grievance Committee
December	3	Board of Credentials
"	7	Review Board for Prepaid Medical Care Benefits
"	11	Committee on Blood
"	12	Subcommittee on Venereal Disease

New Members: The applicants for membership recommended by the Board of Credentials were approved.

Active Members

Jean L. Harris, Freedmen's Hospital
Marie Louise Levy, George Washington University Hospital
Garo S. Matossian, 1780 Massachusetts Avenue, N.W.
Joseph F. Sadusk, Jr., George Washington University Hospital
Leo B. Van Herpe, 1801 Eye Street, N.W.
Blair M. Webb, 1150 Connecticut Avenue, N.W.
Lucas Kulczycki, Children's Hospital
Roscoe C. Young, Jr., Freedmen's Hospital Annex

Associate Members

Joseph W. Costello, 1021 University Blvd., East Silver Spring, Md.
Richard A. Farson, 5241 St. Barnabas Road, Temple Hills, Md.
Luisa O. Puig, Department of Health, Education, and Welfare
Lester J. Sawyer, 2906 New State Department Building
Arturo C. Uy, Georgetown University Hospital
Anna Maria L. Van Rooy, 3000 Connecticut Avenue, N.W.

Resident-Intern Member

Paul M. Duggan, Washington Hospital Center

"An American's Creed": A reprint from *Philadelphia Medicine*, presented by Dr. O. Hugh Fulcher, was read. Dr. Fulcher had requested the Executive Board to consider mailing a copy to all members of Congress. The Executive Board voted to endorse the thoughts behind this editorial and expressed in it and requested that Dr. Raymond T. Holden contact Congressman Durwood Hall and ask him to read this editorial into the *Congressional Record*.

Presentation to Dr. Watts: Dr. Dryden, on behalf of the members of the Executive Board, presented an inscribed silver tray to Dr. Watts in appreciation for his coöperation and guidance during the two terms he served as Chairman of the Executive Board.

The meeting was adjourned at 11:00 p. m.

General News

The Medical Society's **Section on Internal Medicine and Allied Subspecialties and the District of Columbia Society of Internal Medicine** held a joint meeting in November. The following officers, elected by the Section, assumed their duties January 1:

Dr. Paul F. Jaquet, *Chairman*; Dr. George A. Kelser, *Vice Chairman*; Dr. John J. Hughes, *Secretary*; Dr. Thomas E. Curtin, *Treasurer*; and Dr. Alban W. Eger, *member of the Executive Committee*.

The Society of Internal Medicine also elected new officers but they will not take office until July 1. They are:

Dr. Joseph J. Wallace, *President*; Dr. John J. Hughes, *Secretary*; Dr. Thomas E. Curtin, *Treasurer*; and Dr. James J. Feffer, *member of the Executive Committee*.

The Section on Pathology and Laboratory Medicine elected new officers at its meeting, December 18. They are:

Dr. William G. Battaile, *Chairman*; Dr. William L. Marsh, *Vice Chairman*; and Dr. Paul B. Garcia, *Secretary-Treasurer*.

The Holy Cross Hospital at 1500 Forest Glen Road, Silver Spring, Md., was officially dedicated, January 6, 1963. The Most Rev. Patrick A. O'Boyle, Archbishop of Washington, took part in the ceremonies. The Honorable Anthony J. Celebrezze, Secretary of Health, Education, and Welfare, gave the principal address. The hospital held open house, January 5 and 6, and admitted its first patients on January 10.

Sisters of the Holy Cross will administer the Hospital, which was built at a cost of 8 million dollars and has an eventual bed capacity of 350; 250 beds are now ready for occupancy.

The Renal and Electrolyte Division of Georgetown University Hospital has received a grant of $439,361 from the John A. Hartford Foundation, Inc. Including the new grant, the Hartford Foundation has contributed $750,000 since 1956 to this division at Georgetown, which is headed by Dr. George E. Schreiner. The new funds have made possible the addition of Dr. Carl Goldsmith to the faculty of medicine. Dr. Goldsmith was recently on the faculty of the Medical College of Virginia.

Q. T. Washington, Inc., a mutual-aid organization which is made up of individuals with ileostomies, colostomies and ileobladders, has been beneficial to both surgeon and patient. Its services, which are available at the request of the attending physician, include preoperative visits to patients who are apprehensive of the operation. After recovery members will help patients in the care and management of problems which are not of a medical nature.

Doctors may contact Mr. Donald C. Rosenthal (telephone Woodley 6-3426) during the day, or Mrs. Dorothy Rogers (Spruce 3-1097) evenings.

Prince Georges County (Md.) Medical Society has elected the following officers:

Dr. Albert Roth, *President*; Dr. Norman D. Comeau, *Vice President*; Dr. Frederick E. Musser, *Secretary*; and Dr. William A. Holbrook, Jr., *Treasurer*.

All of these officers except Dr. Holbrook are Associate members of the D. C. Medical Society.

Dr. John C. Ransmeier is the new President of the **Medical Staff of Alexandria (Va.) Hospital.** Other officers are:

Dr. James Brown, *President-elect*; Dr. H. Glenn Thompson, *Secretary-Treasurer*; and Drs. John C. Watson, John W. Roark, Alvin C. Wyman, and Simon Paluch, *members of the Executive Committee*.

Drs. Ransmeier, Watson, Roark, and Wyman are Associate members of the Medical Society of the District of Columbia.

Dr. Wilhelm C. Hueper, Director of the Environmental Cancer Section of the National Cancer Institute, was one of 10 medical leaders to receive the Distinguished Achievement Awards from the editors of *Modern Medicine*. Dr. Hueper was cited for "his identification of carcinogenic substances and his undaunted courage and perseverance in effecting control of noxious environmental agents in industry."

Personals

Brig. General Frank E. Wilson, until recently Executive Vice President of the Joint Blood Council at Washington, D. C., has been selected Executive Director of the Association of Military Surgeons of the United States.

General Wilson, an active medical reservist of the Army and Commander of the 805th Hospital Center, is Chairman of the Army Surgeon General's Advisory Council on Reserve Affairs. He is a charter member of the American College of Preventive Medicine.

The Executive Council of the Association has also announced the appointment of Brig. General Amos R. Koontz, of Baltimore, as Editor of its *Military Medicine*. General Koontz is Past President of the Association and a nationally known surgeon who has distinguished himself in medical literature.

Dr. William L. Howell has been elected Medical Director of the Washington Clinic. Dr. Howell is on the faculty of Georgetown University School of Medicine as Clinical Assistant Professor of Medicine. A cardiologist, he is a former President of the Washington Heart Association and is on the staffs of Georgetown Hospital and the Washington Hospital Center.

Dr. J. Spencer Dryden, immediate Past President of the D. C. Medical Society, assumed the duties of Vice President of the National Medical Foundation for Eye Care, January 1. Dr. Dryden, who was one of the founders of the organization in 1955, was elected to this office at the Annual Meeting of the Foundation in Las Vegas, Nevada, in November 1962. The Foundation has its headquarters offices in New York City.

Dr. Edward W. Nicklas, President-elect of the D. C. Medical Society, has been added to the roster of distinguished graduates of old Central High School. The Alumni Association held its 53rd Annual Reunion, December 26, at the Shoreham Hotel. Dr. Nicklas, of the Class of 1922, was one of 6 who were presented Certificates of Distinction. A specialist in internal medicine, he is on the medical staffs of the Washington Hospital Center and Doctors Hospital.

Dr. Leonard A. Scheele, former Surgeon General of the Public Health Service, accompanied Attorney James B. Donovan from Miami to Havana, December 20, to serve as consultant in the discussions with the Castro government concerning the release of the Cuban prisoners. Dr. Scheele undertook the assignment at the request of the American Red Cross and the Cuban Families Committee. His expert opinion was sought on questions concerning the type of medicines and medical supplies requested and those available in the stocks assembled by the Red Cross. Dr. Scheele, who resides in Summit, N. J., is an Honorary member of the D. C. Medical Society.

Dr. William B. Walsh, founder and President of Project "Hope," an activity of the People-to-People Health Foundation, has received two of the highest awards given by the Peruvian Government, the Knight of the Magisterial Palms and Knight of the Daniel A. Carrion. The staff of *S.S. Hope*, under Dr. Walsh's direction, has been conducting tuberculosis screening in Peru and providing mass immunization against childhood diseases.

Vice Admiral Joel T. Boone, MC, USN (Ret.) is one of 20 physicians who have received this "Nation's highest honor" since the medal was authorized by Congress on December 21, 1861, and he is the only living medical recipient. A brief biography of each of these 20 recipients is included in an article written by Dr. Roy J. Popkin, of Los Angeles, which appeared in the December 29 issue of the *Journal of the AMA*.

Dr. Popkin states that Dr. Boone was one of only 2 physicians who won the award during World War I. His citation reads in part:

> "For extraordinary heroism, conspicuous gallantry, and intrepidity while serving with the Sixth Regiment of the United States Marines, in actual conflict with the enemy at and in the vicinity of Vierzy, France, July 18, 1918. With absolute disregard for personal safety, ever conscious and mindful of the suffering fallen, Surgeon Boone, leaving the shelter of a ravine, went forward onto the open field where there was no protection and despite the extreme enemy fire of all calibers, through a heavy mist of gas, applied dressings and first aid to wounded Marines. . . . "

Dr. Boone retired with the rank of Vice Admiral in 1950, following which he served as Chief Medical Director of the Veterans Administration. He is an Honorary member of the D. C. Medical Society.

New Fellows of the American College of Physicians are **Drs. Edward Adelson, Louis A. Craig, John M. Evans, James J. Feffer, Frank A. Finnerty, Jr., G. Lennard Gold, W. Proctor Harvey, William E. Reefe, Raymond Scalettar, and Irwin Siegel. Dr. Frank J. Talbot** was elected an Associate of the College.

All of these physicians are Active members of the D. C. Medical Society except Dr. Gold and Dr. Siegel, who are Associate members.

Auxiliary Fashion Show-Luncheon

The Womans' Auxiliary to the Medical Society of the District of Columbia is sponsoring a Fashion Show-Luncheon on Wednesday, March 13, 1963, 12:30 p.m., in the Mayflower Hotel Ballroom, for the benefit of the Nursing Scholarship and American Medical Association Education and Research Fund. Fashions will be modeled by courtesy of the Connecticut Avenue Business Association, with Miss Ginny deFranceaux, of the Models' Guild, as commentator. Tickets are $7.50 per person. Reservations may be secured by calling Mrs. Peter Murphy, Oliver 6-9711.

Mrs. Clifton R. Gruver is in charge of publicity and Mrs Hewitt I. Varney is chairman of Program and Advertising.

Letters to the Editor

Physician Needed in Burma

An excellent opportunity exists for a young American general practitioner with an interest in surgery to work with the famed Burma surgeon, Dr. Gordon S. Seagrave, at his 250-bed hospital in Namkham, Burma.

Minimum appointment is for 2 years. With satisfaction an extended tenure would be encouraged.

The candidate should be an American citizen of any race or religion but his age should not exceed 40. He may be married or single. If married to a trained nurse there would be an important place for her in the nurses training program; or to a school teacher, an opportunity to teach in the secondary school on the hospital compound.

Extensive experience is not a requirement but graduation from an "A" class medical school is. Professional practice at the Namkham Hospital is intensive, widely varied and often rare to Western medical experience.

The candidate must be prepared to leave for Burma not later than the spring of 1963, or sooner if possible (depending upon issuance of his visa) so that his appointment can overlap that of the American doctor now serving the program.

This appointment offers a modest salary per annum. Travel expenses and Western style housing will be provided.

Anyone interested should please write: American Medical Center for Burma, Inc., 6 Penn Center Plaza, Philadelphia 3, Penn., stating qualifications, etc.

Sincerely yours,
John F. Rich
Executive Vice Chairman,
American Medical Center
for Burma, Inc.

Obituaries

Edgar Pasqual Copeland, M.D., F.A.A.P., F.A.C.P.

(1878–1962)

Dr. Edgar P. Copeland, Chief of Staff Emeritus at Children's Hospital, died, November 21, 1962, at Doctors Hospital. He lived at 2711 Woodley Road, N.W.

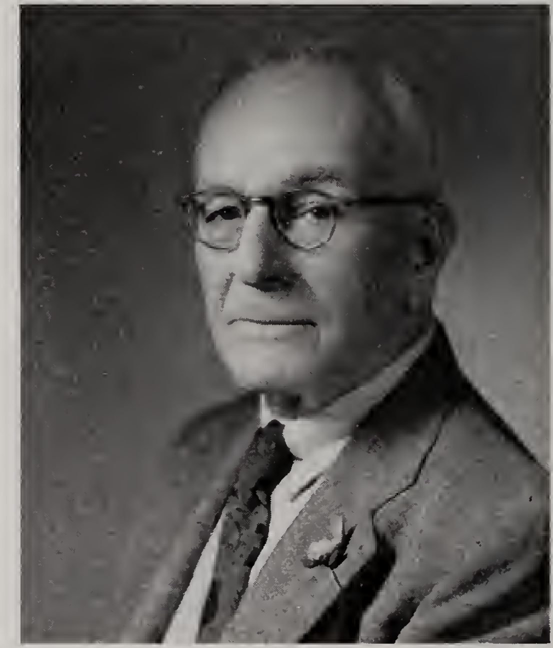
A native of Washington, Dr. Copeland was born, November 24, 1878, to Martin G. and Amanda R. Copeland. He attended both private and public schools in Washington and graduated from Eastern High School in 1896. After receiving his medical degree from Columbian (now George Washington) University in 1900, he interned at the University Hospital and took resident training in pediatrics at Children's Hospital. He also went abroad for training in internal medicine at the Metropolitan School of Medicine in London.

Dr. Copeland began his practice as a general practitioner, but later limited himself to pediatrics. The only other pediatrician practicing in Washington at the same time was his friend, the late Dr. Joseph S. Wall. The names of both Dr. Copeland and Dr. Wall will always be associated with Children's Hospital.

Dr. Copeland's affiliation with Children's began when he was a medical student in 1898. He became chief resident in 1901 and was assistant to the attending staff from 1907 to 1921. He was on the attending staff from 1921 to 1951, when he was made Chief of Staff, a position he held until 1954. When he resigned in that year he was made Chief of Staff Emeritus. The Hospital established the annual Edgar P. Copeland Lectureship in his honor in 1960. He was a trustee and former Vice President of Children's Hospital Research Foundation and a director of the Hospital. He had also served long as attending pediatrician at Columbia Hospital for Women.

Dr. Copeland was Secretary-Treasurer for many years of the old District Medical Board which functioned until 1926. He was a member of the committee which wrote the Healing Arts Practice Act of 1929.

He had a long teaching association with George Washington University, beginning in 1908 as Assistant Clinical Professor of Pediatrics and terminating in 1924 as Clinical Professor of Pediatrics.



EDGAR P. COPELAND, M.D.

During World War I he was in active service for a year and continued in the Medical Reserve Corps for 4 years, with the rank of Lt. Commander.

In 1951 the D.C. Medical Society awarded him its Certificate for Meritorious Service.

Dr. Copeland was a diplomate of the American Board of Pediatrics. He was a charter member of the American Academy of Pediatrics, a Fellow of the American College of Physicians, a Life member of the Medical Society of the District of Columbia since 1942, Past President of the American Association of Teachers of Pediatrics and Central State Pediatric Society (the latter two no longer in existence), Past President of the George Washington University Medical Society, and a member of the American Medical Association and the Hippocrates-Galen Society. He also belonged to Rotary, the Army-Navy Club, and the Columbia Country Club.

His wife, Ann Tuthill Copeland, preceded him in death. He is survived by a brother, Theron Copeland, of 2709 Woodley Road, N.W.

Herbert Everard Martyn, M.D.

(1878–1962)

Dr. Herbert E. Martyn, a Life member of the Medical Society of the District of Columbia, died, November 17, 1962, at Suburban Hospital in Bethesda, Md. His home was at 2814 - 34th Street, N.W.

Dr. Martyn was a native Washingtonian who spent his entire career in the Washington area. He was born to John T. and Rosalla H. Martyn, November 12, 1878. He attended Washington public schools and graduated from Eastern High School. His medical degree was obtained from George Washington University in 1904 and he interned the following year at Emergency Hospital.

A general practitioner, he was licensed in the District of Columbia in 1904. He practiced continuously for more than 50 years and had visiting staff privileges at all of the Washington hospitals. From 1922 to 1927 he was Deputy Coroner for the District of Columbia.

During World War I he served as chairman of the District Draft Board, and during World War II he was a member of the Draft Appeals Board.

Dr. Martyn was a member of the American Medical Association, a Life member of the Medical Society of the District of Columbia since 1946, and a member of the George Washington University Medical Society and the Hippocrates-Galen Society. He belonged to the Columbia Historical Society, the Cedars of Lebanon Lodge, A.F. & A.M., and the Columbia Country Club.

He is survived by his wife, Mrs. Nellie Pullman Martyn; two sons, Dr. Herbert E. Martyn, Jr., of Chevy Chase, Md., an Associate member of the D.C. Medical Society, and John P. Martyn of Alexandria, Va.; and two daughters, Mrs. H. Fleet Harper, of Bethesda, and Mrs. Raymond Glasgow, of College Park, Md. He also leaves a brother, John W. Martyn, of Washington, and two sisters, Mrs. Edith Whitman, of Bethesda, and Mrs. Roy Miskimon, of Richmond, Va.

Howard Francis Strine, M.D., F.A.C.S.

(1878–1962)

Dr. Howard F. Strine, former Naval medical officer and a well known surgeon, died, December 6, 1962, at his home, 4000 Cathedral Avenue, N.W.

Dr. Strine was born in Marion, Pa., August 25, 1878. His parents were Daniel and Mary Elizabeth Strine. He studied medicine at New York University and interned at Bellevue Hospital, receiving his medical degree in 1902.

Dr. Strine was a career officer and surgeon in the United States Navy from 1903 to 1921. He spent a year in Europe observing surgical treatment and techniques in German hospitals for the Board of Medicine and Surgery of the Navy Department. From 1917 to 1920 he was Chief of Surgery at the U. S. Naval Medical School in Washington.

Dr. Strine resigned his commission of Commander in 1921 and engaged in the private practice of surgery in Washington with his nephew, Dr. Howard H. Strine. They had their offices in the old Farragut Medical Building. He was on the surgical staff of Columbia Hospital for Women, Garfield Memorial, D.C. General, and Georgetown Hospitals. He retired from practice 4 years ago.

Dr. Strine was a Fellow of the American College of Surgeons and a year ago became a Life member of the Medical Society of the District of Columbia. He was a member of the Clinical Club of Washington, the Sojourners and Heroes of '76, and the Military Order of the Carabao. He was also a member of the Army-Navy Club, a charter member of the Army-Navy Country Club, and a life member of the Washington Golf and Country Club.

Surviving him are his wife, Mrs. Ruth Powell Strine; a son, Fred E. Strine, of Washington; and two daughters, Mrs. Elizabeth S. Fields, of Washington, and Mrs. Margaret S. Grenouillou, of West Palm Beach, Fla.; also a brother, Clinton O. Strine, of Waynesboro, Pa.

John Sinclair Perry, A.B., M.D.

(1889–1962)

Dr. John S. Perry, a neuropsychiatrist who had practiced in Washington since 1936, died November 14, 1962, at Freedmen's Hospital. His home address was 4800 - 17th Street, N.W.

Dr. Perry was born in Fayetteville, N. C., to

Dallas and Mary L. Perry. He attended the public schools and the State Teachers College at Fayetteville. He received his Bachelor of Arts degree from Shaw University, of Raleigh, N. C., in 1910; then turning to medicine, he graduated from Leonard Medical School of the University of West Tennessee in 1915.

Dr. Perry practiced first in Hamlet and later in Wilmington, N. C. He came to Washington to do postgraduate work at Howard University in 1924, and moved to Washington in 1936 and trained for 2 years in neuropsychiatry at St. Elizabeths Hospital. He was licensed to practice in the District of Columbia in 1936.

Dr. Perry was Clinical Assistant in Neuropsychiatry at Freedmen's Hospital from 1938 to 1939. He was a member of the Psychiatric Division of the Fort Myer Medical Examining Board from 1942 to 1944. He maintained his private practice in offices at 302 Virginia Avenue, S.E. until his death.

He served on the Board of Directors of the Washington Welfare Association. He was Past President of the Medico-Chirurgical Society of D.C. and a Fellow of the National Medical Association. He was elected to Active membership in the Medical Society of the District of Columbia in 1952. He belonged to St. Mary's Episcopal Church.

Dr. Perry contributed many articles to the literature on psychiatry and neurology. He was also a devotee of the arts. Early in his career he had studied violin for a year at the New England Conservatory of Music. He wrote poetry, painted, and played the violin in the Doctors Orchestra.

Surviving him are his wife, Mrs. Elizabeth Perry, and two sons, John S. Perry, Jr. and Dr. Sheridan L. C. Perry, of Washington, all of the home address.

Sara Elizabeth Branham, A.B., M.S., Ph. D., M.D.

(1888–1962)

Dr. Sara E. Branham, a pioneer woman bacteriologist, died, November 17, 1962, at her home, 3133 Connecticut Avenue, N.W. She had been associated with the U.S. Public Health Service for 30 years.

Dr. Branham was born in Oxford, Ga., July 25, 1888, to Junius W. and Sarah Stone Branham. She attended the Palmer Institute of Oxford. She received the Bachelor of Arts degree from two institutions, Wesleyan College of Georgia, in 1907, and the University of Colorado, in 1919. She also earned three degrees from the University of Chicago, Master of Science (1920), Ph.D. in bacteriology (1923), and Doctor of Medicine (1934).

She served on the faculty of the University of Chicago as Instructor in Bacteriology from 1923 to 1927. The following year she joined the Public Health Service as Senior Bacteriologist. She retired in July, 1959 as Chief of the Section on Bacterial Toxins, National Institutes of Health. She also had served on the faculty of George Washington University as Professorial Lecturer in Preventive Medicine from 1938 to 1952.

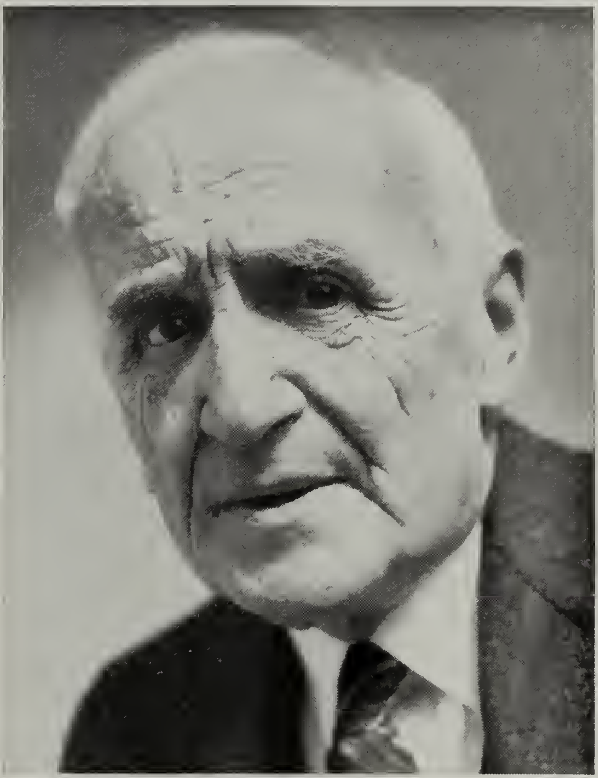
Dr. Branham was the recipient of many honors. She received the Ricketts prize for research in pathology in 1924 and in 1937 was awarded the honorary degree of Doctor of Science from the University of Colorado. She was given the first "Outstanding Achievement Award" by the Wesleyan College Alumnae Association. In 1952 she received the Distinguished Service Award from the University of Chicago Medical School Alumni Association. In 1959 she was named "Medical Woman of the Year" by the American Medical Women's Association.

She was a diplomate of the American Board of Pathology. She was a member of the American Medical Association, the Society of American Bacteriologists, American Association of Immunologists, the Society for Experimental Biology and Medicine, the American Public Health Association, the American Association for the Advancement of Science, the Washington Academy of Sciences, and the Women's Medical Society. She had been an Associate member of the Medical Society of the District of Columbia since 1934. She also belonged to many professional fraternities.

Dr. Branham was the author of more than 70 papers on the results of research in bacteriology and immunology. She was co-author of two books and contributor to a third.

Since her retirement in 1958 she had been active in the promotion of science education relating to meningitis.

She was married to the late Philip S. Matthews but used her maiden name during her professional career.



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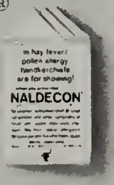

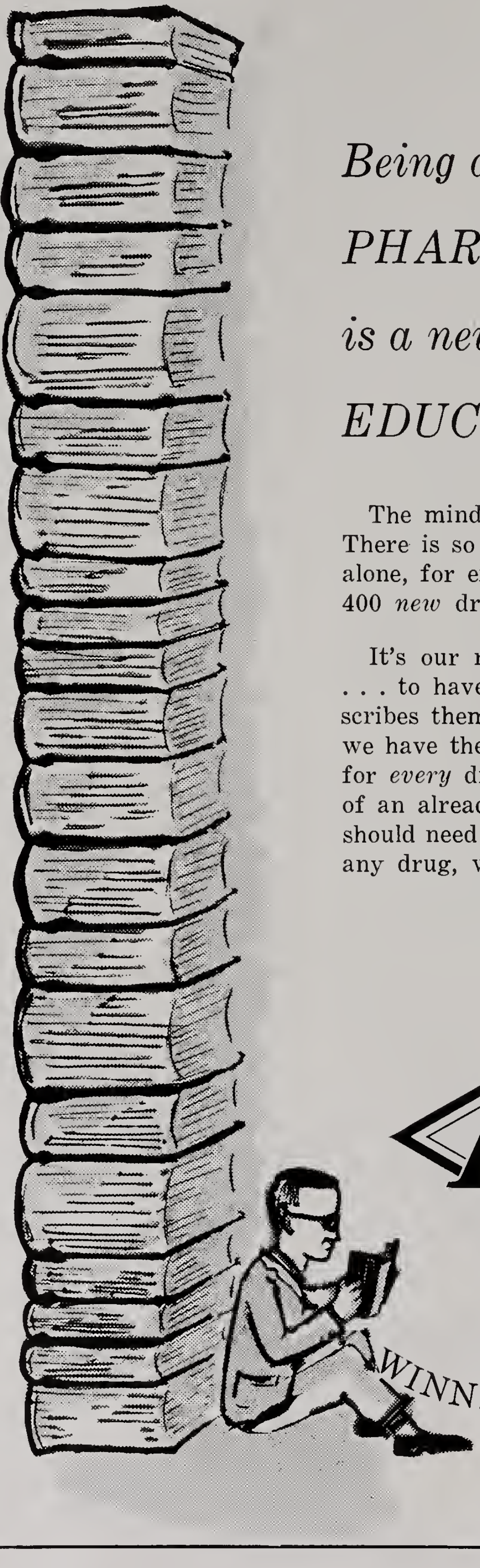

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Vitamin C (Ascorbic Acid)	300 mg.
Vitamin B_6 (Pyridoxine HCl)	2 mg.
Vitamin B_{12} Crystalline	4 mcgm.
Calcium Pantothenate	20 mg.

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*Asherson, N., "Acute Otitis and Mastoiditis in General Practice," H. K. Lewis & Co., Ltd., London, 1934.

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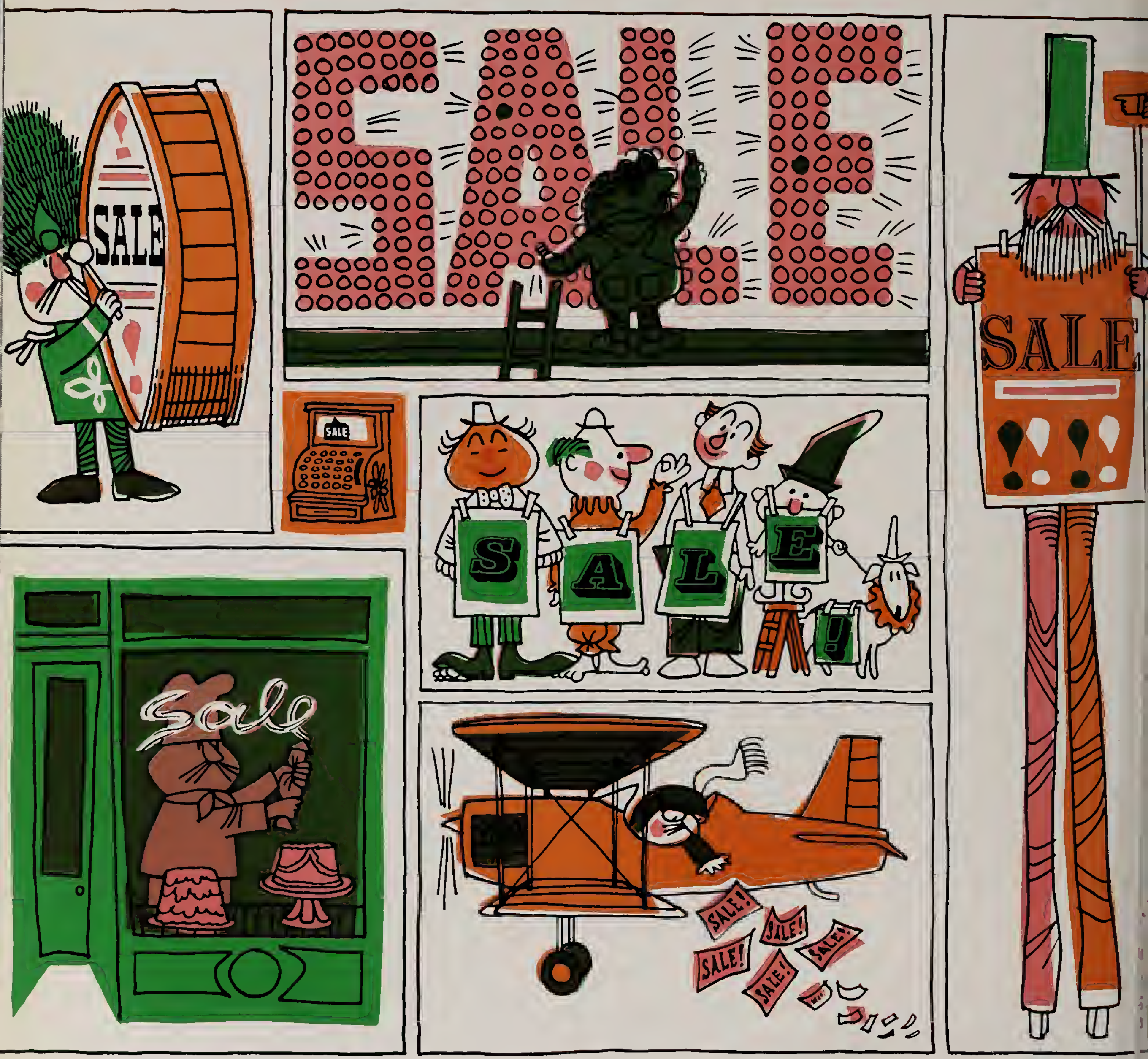
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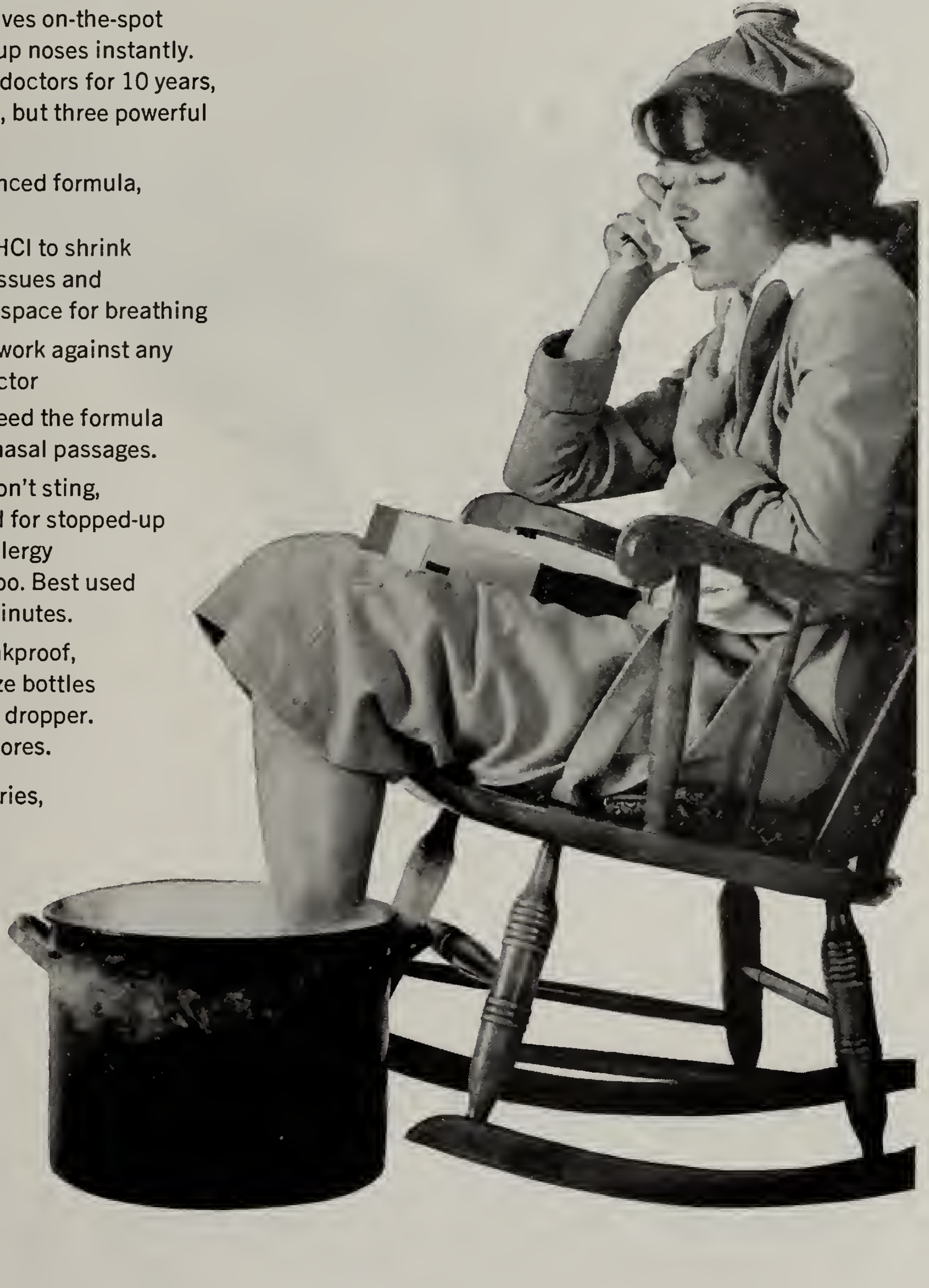

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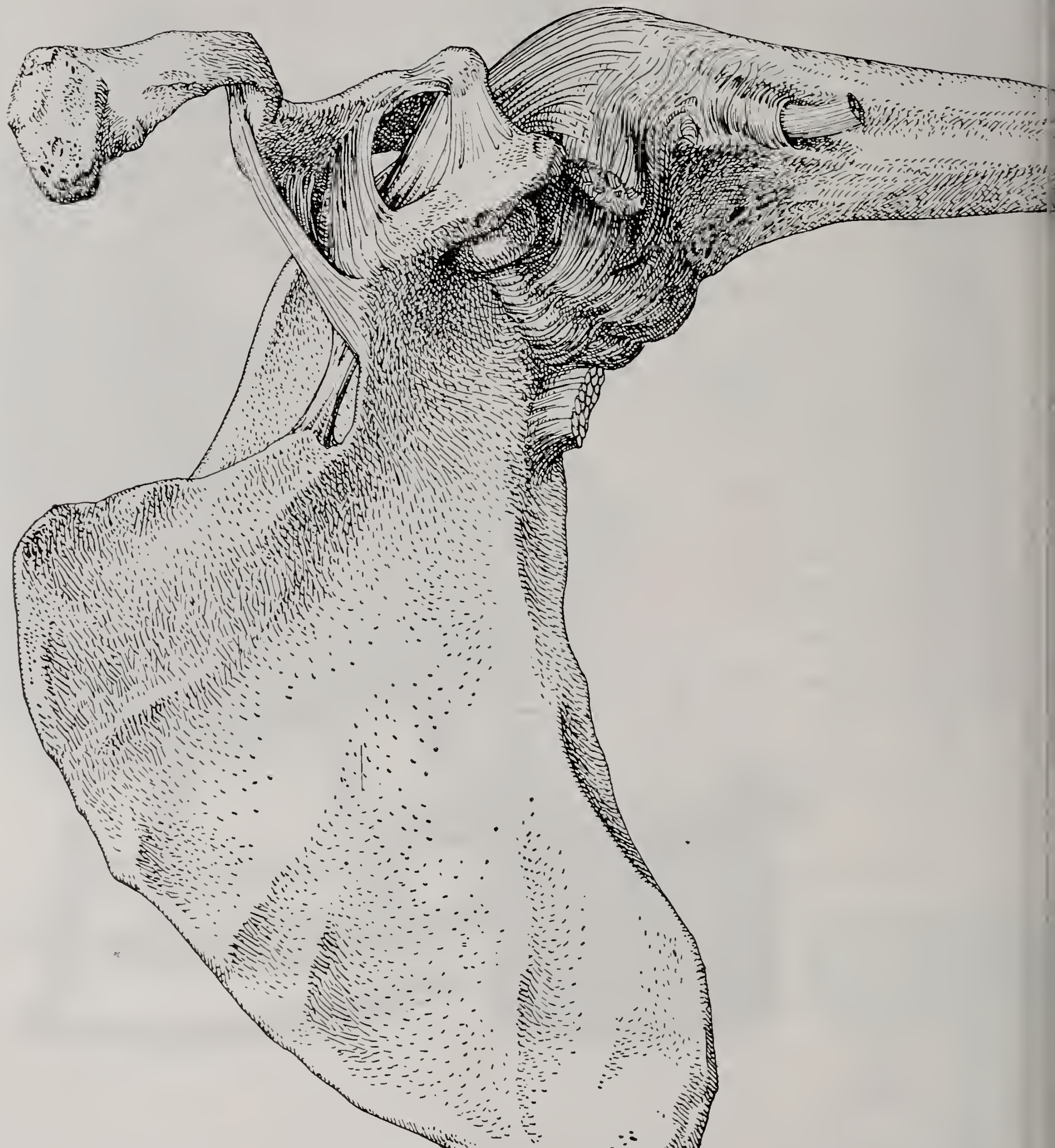

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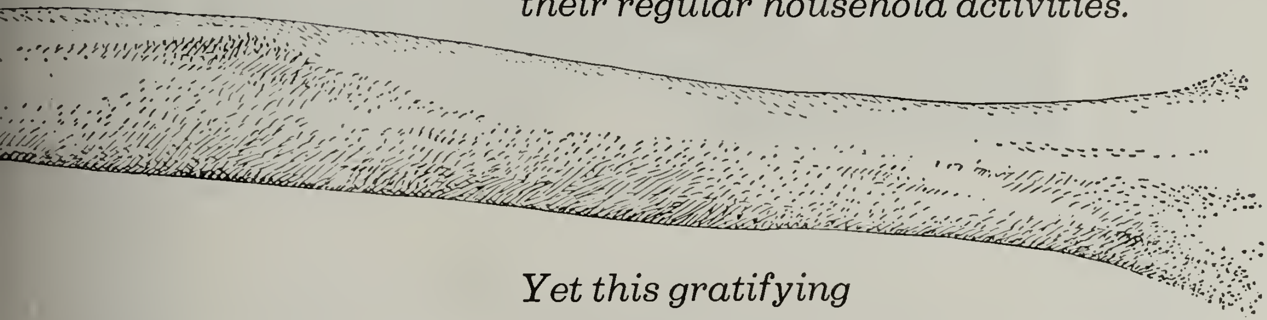

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Poythress, White Section, Page 808 (1963 edition)
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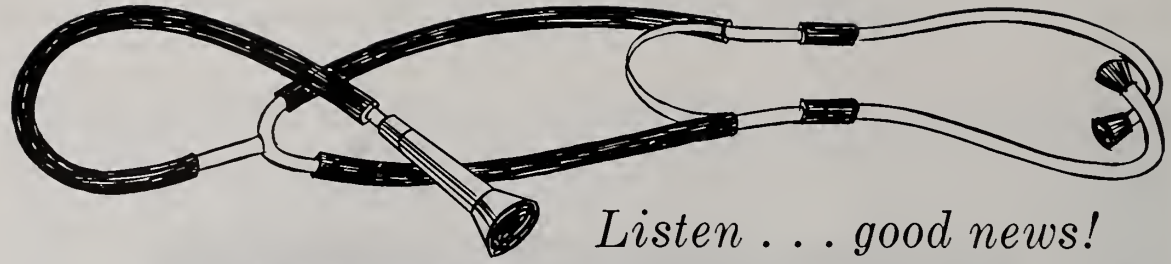

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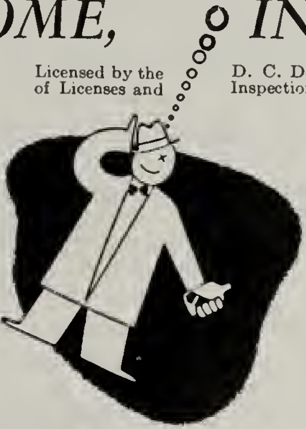

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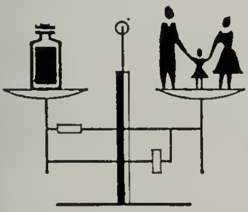

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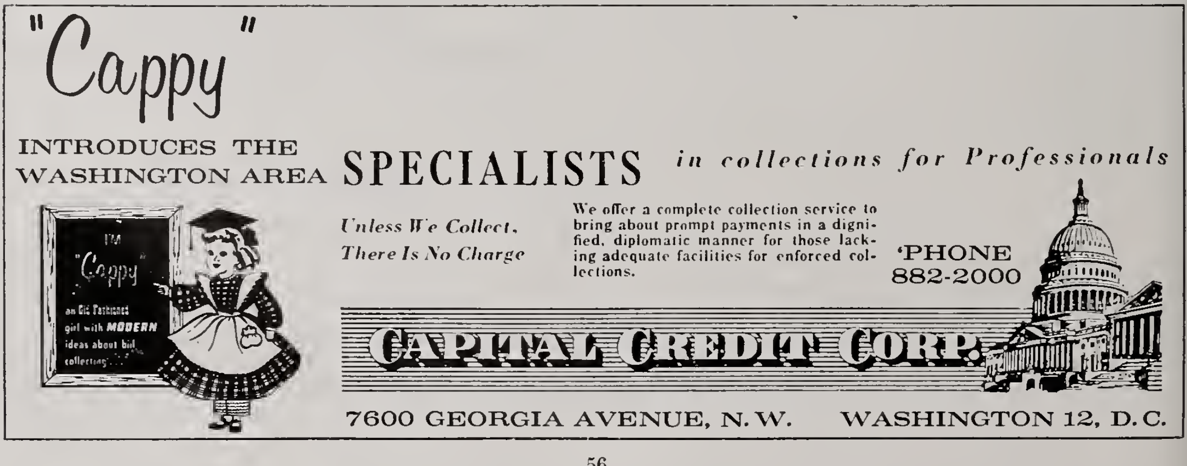
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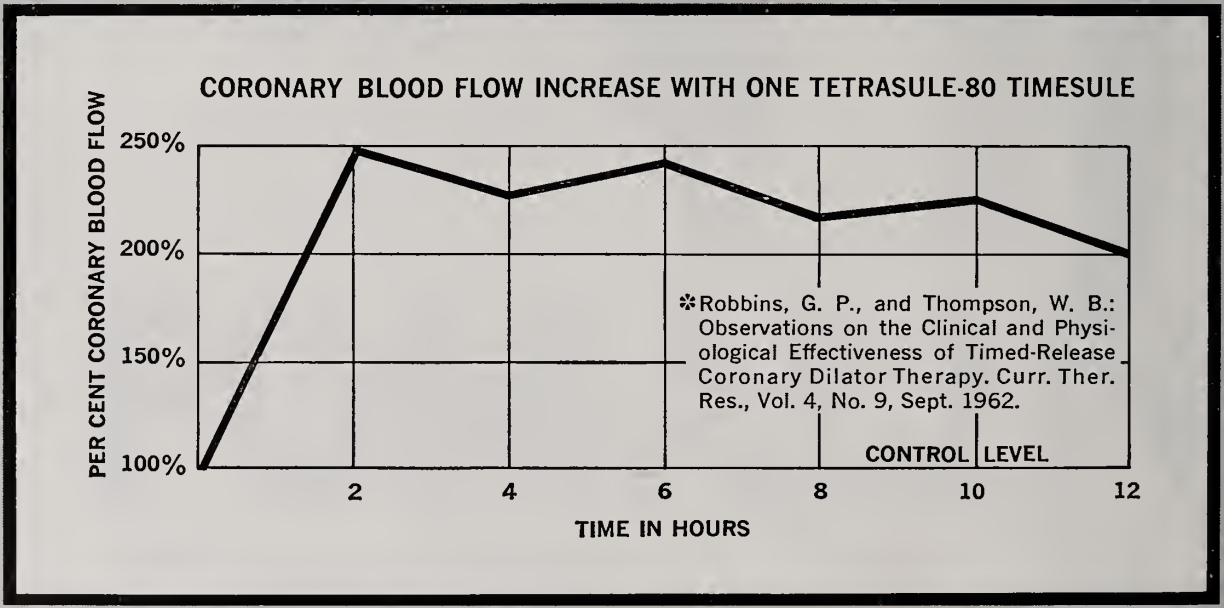

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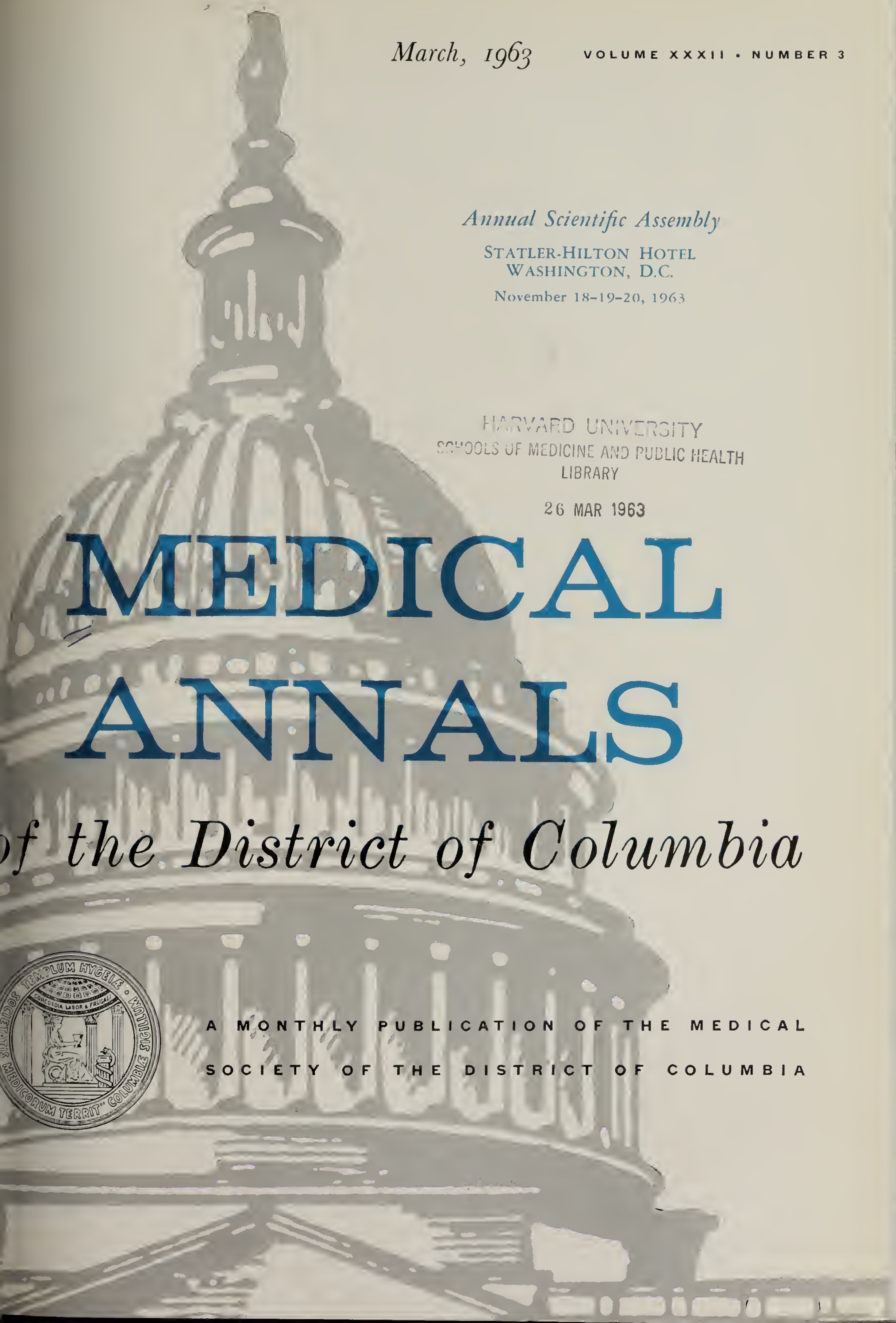

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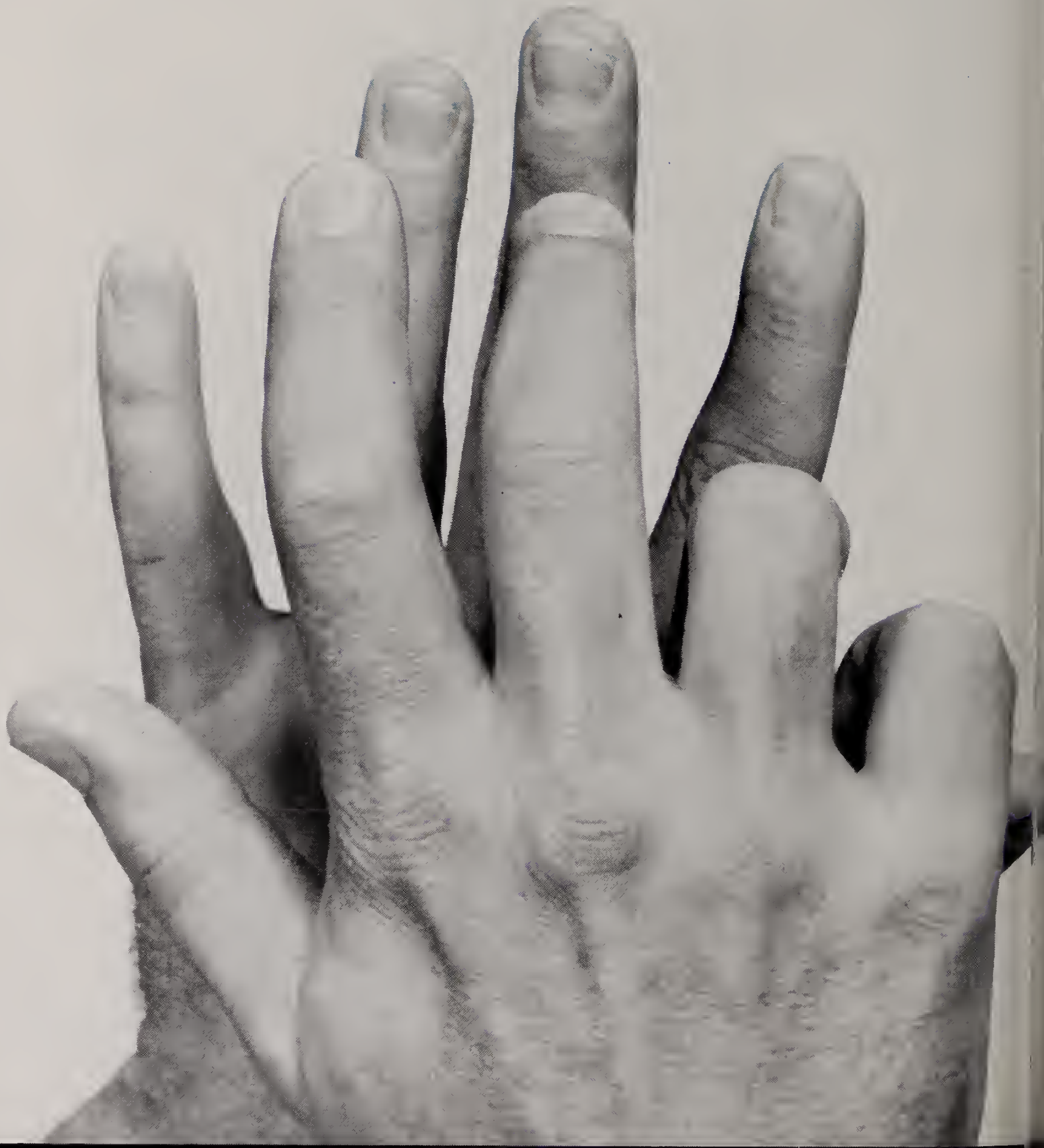

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References: (1) Thacher, H. C., & Fishman, L.: *J. Maine M. A.* **52**:84, 1961. (2) Hopkins, E. W.: *Postgrad. Med.* **29**:451, 1961. (3) Hall, W. H.: *M. Clin. North America* 43:191, 1959. (4) Krugman, S.: *Pediat. Clin. North America* **8**:1199, 1961. (5) Ede, S.; Davis, G. M., & Holmes, F. H.: *J.A.M.A.* **170**:638, 1959. (6) Wolfsohn, A. W.: *Connecticut Med.* **22**:769, 1958. (7) Calvy, G. L.: *New England J. Med.* **259**:532, 1958. (8) Hendren, W. H., III, & Haggerty, R. J.: *J.A.M.A.* **168**:6, 1958. (9) Cutts, M.: *Rhode Island M. J.* 43:388, 1960. (10) Berman, W. E., & Holtzman, A. E.: *California Med.* **92**:339, 1960. (11) Vetto, R. R.: *J.A.M.A.* **173**:990, 1960. (12) Sia, C. C. J., & Brainard, S. C.: *Hawaii M. J.* **17**:339, 1958. (13) Rosenthal, I. M.: *GP* **17**:77 (March) 1958. (14) Gaisford, W.: *Brit. M. J.* **1**:230, 1959.

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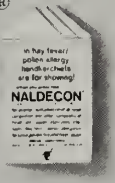

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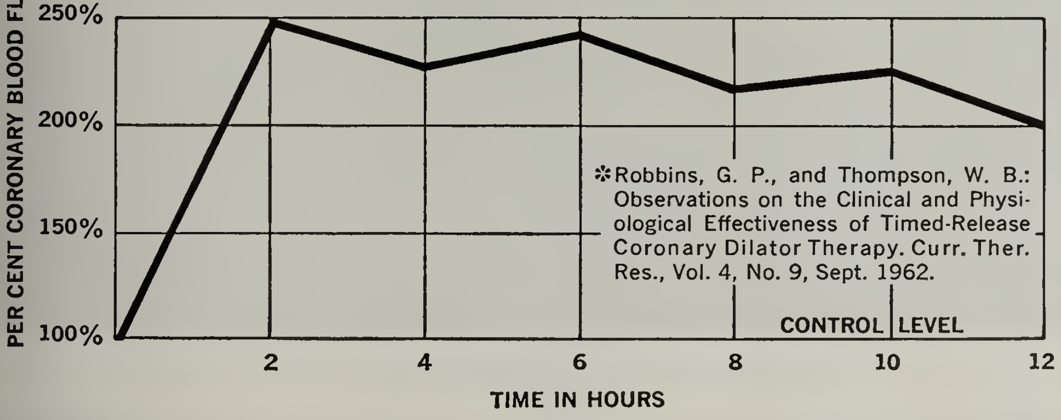

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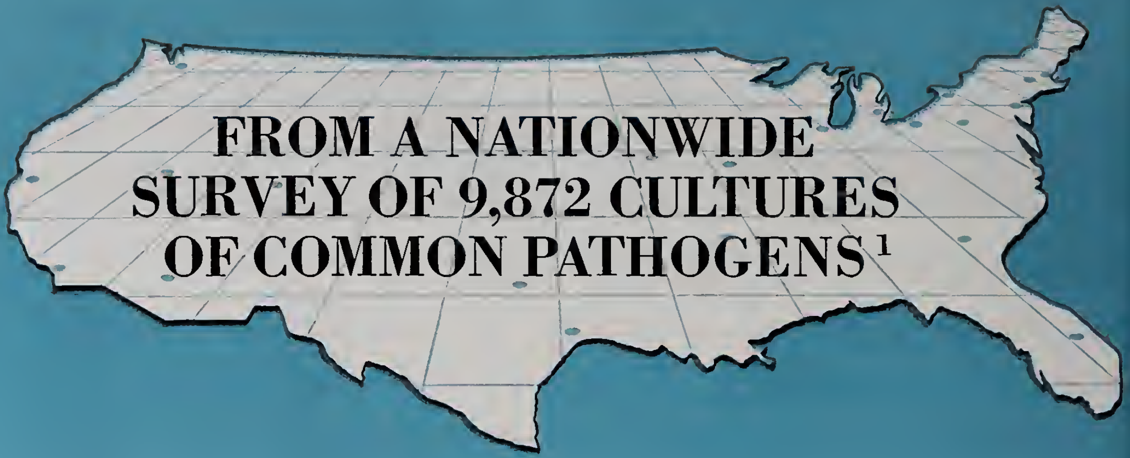
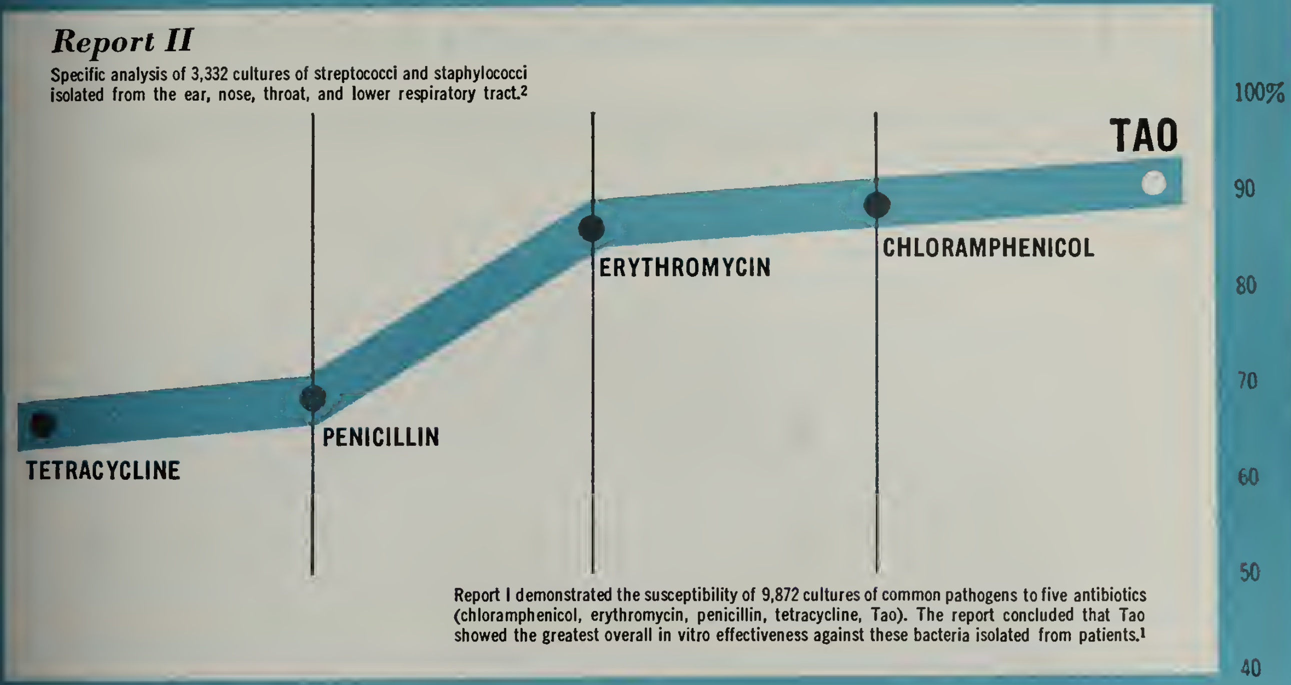


Conclusions of Nationwide Survey: *Report I*

1. **Even after five years of general use,** Tao, of the antibiotics tested, demonstrated greatest activity against respiratory streptococci and staphylococci (3,332 cultures).

2. **Overall results showed a higher percentage of susceptibility** among these common pathogens to Tao than to the other antibiotics. Susceptibility to Tao was greatest, not only in respiratory streptococci and staphylococci, but also in these organisms isolated from skin and soft tissue (3,423 cultures), genitourinary and gastrointestinal tracts and other sources (2,458 cultures). Susceptibility was equal to all antibiotics tested in pneumococci from unspecified sources (463 cultures), and less to Tao in H. influenzae from unspecified sourc
(196 cultures).

3. **Tao has been used for five years witho
development of predictable cross resistanc**
In 1958 and 1961, approximately 73% and 70
respectively, of erythromycin-resistant proble
staphylococci showed susceptibility to Tao.[3,4] T
present study confirms the continuing high degr
of Tao activity even against these pathogens.
1,592 cultures of erythromycin-resistant staph
lococci, 68% were susceptible to Tao, while in t
reverse situation, only 33% of 768 Tao-resista
staphylococci were susceptible to erythromyci



Report II

Specific analysis of 3,332 cultures of streptococci and staphylococci isolated from the ear, nose, throat, and lower respiratory tract.[2]

Report I demonstrated the susceptibility of 9,872 cultures of common pathogens to five antibiotics (chloramphenicol, erythromycin, penicillin, tetracycline, Tao). The report concluded that Tao showed the greatest overall in vitro effectiveness against these bacteria isolated from patients.[1]

Report II

Results of Bacterial Susceptibility in ,332 Respiratory Pathogens

eferences

'Bacterial Susceptibility Patterns: A Geographic Sur-.'' Fowler, J. Ralph, M.D., and Watters, John L., D. Scientific Exhibit presented at the Annual Meet- of the American Society of Clinical Pathologists, icago, Ill., August 31 to September 9, 1962. Fowler, J. Ralph, Watters, John L. and Levy, Arthur : Bacterial Susceptibility Patterns as Related to Geo-phic Variation and Anatomical Source. In press. English, A. R., and Fink, F. C.: Antibiot. & Chemo-r. 8:420 (Aug.) 1958. 4. English, A. R., and Fink, C.: Antibiot. and Chemother. 11:648 (Oct.) 1961.

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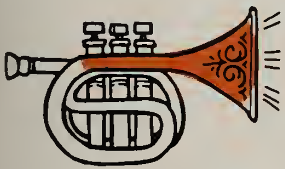

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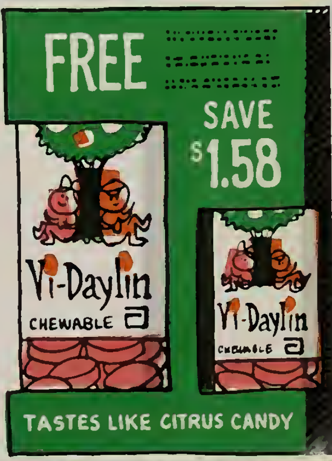
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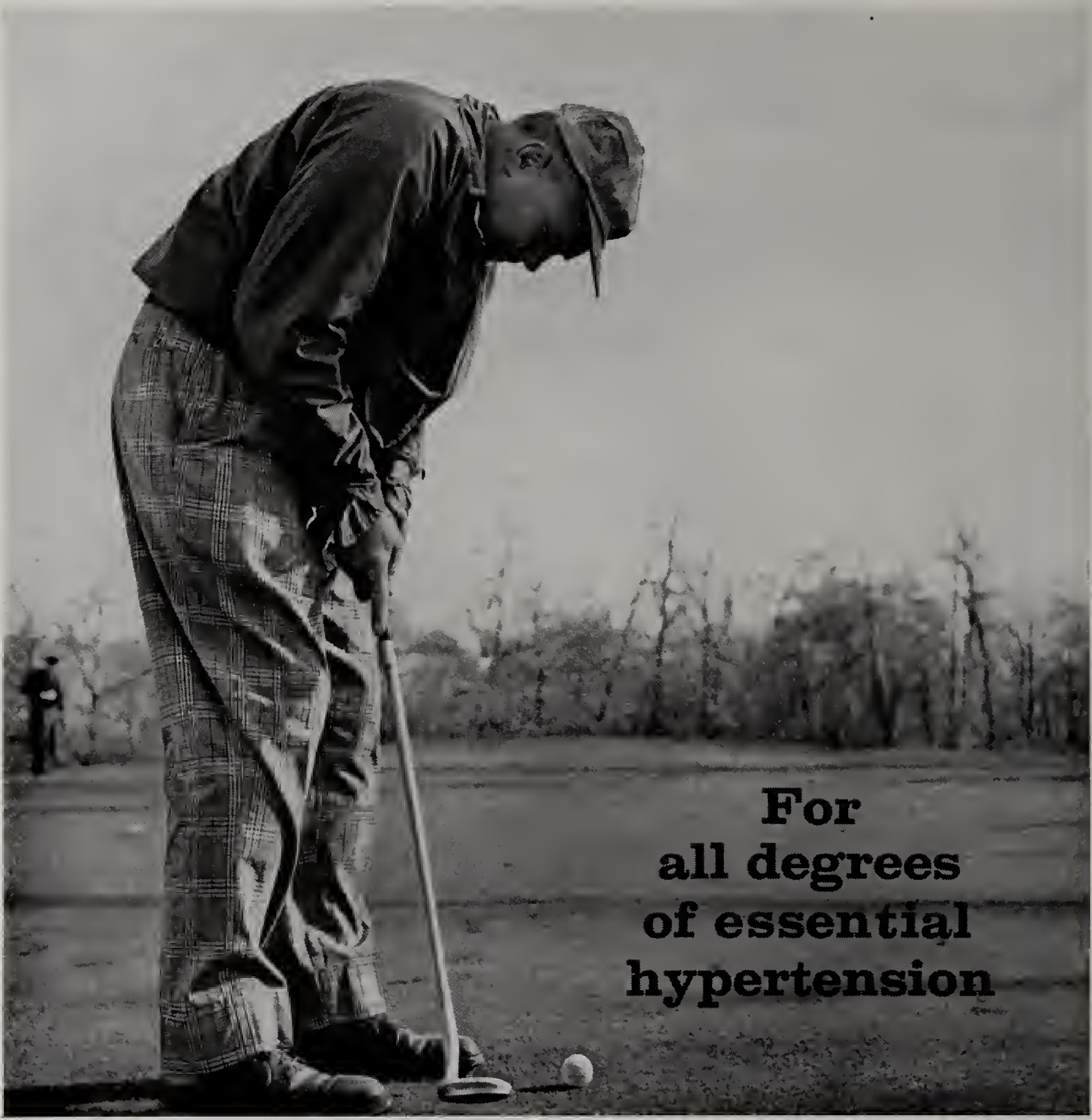

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†Hutchison J. C.: Current Therap. Res. *2*:487 (Oct.) 1960.

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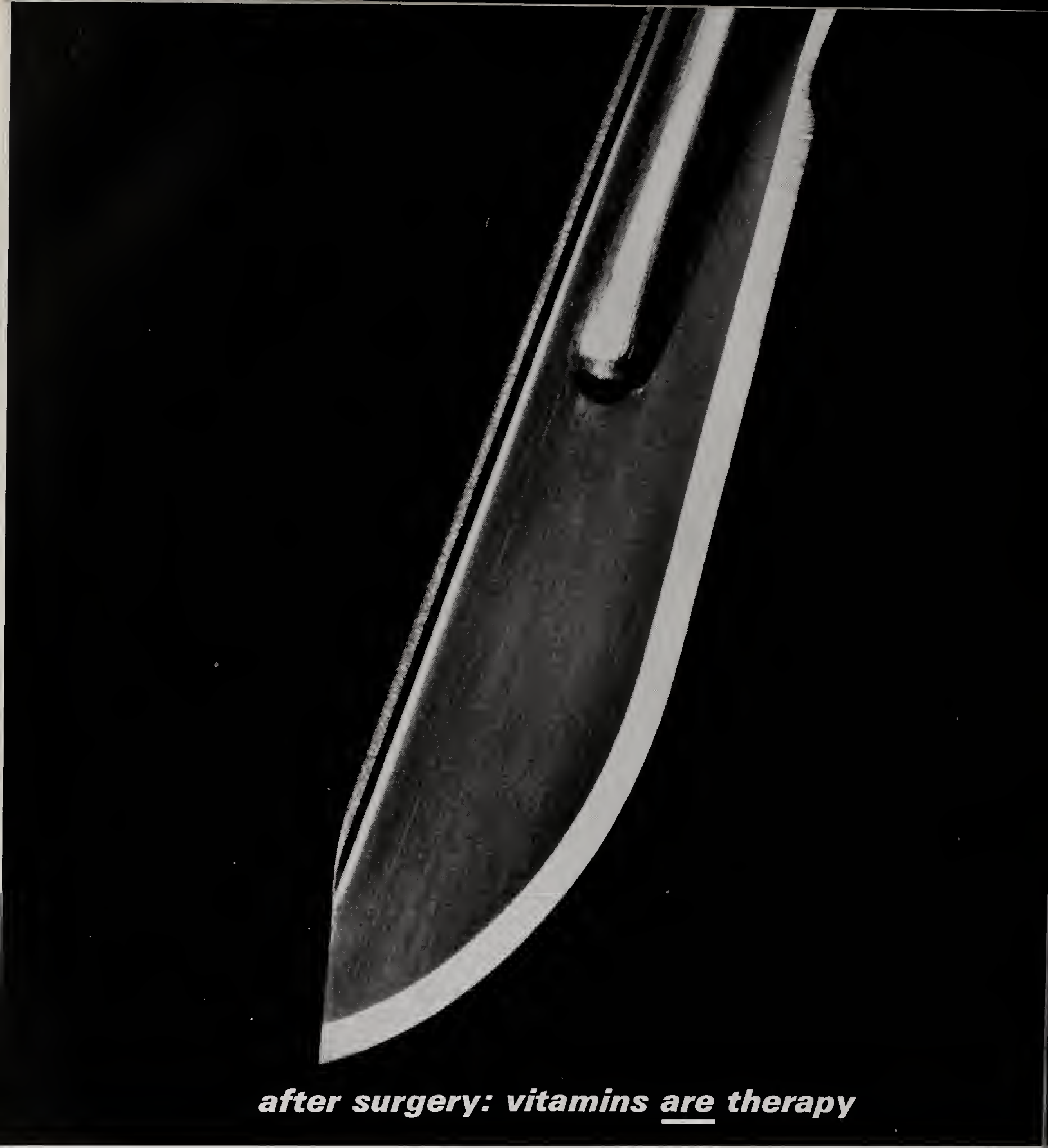

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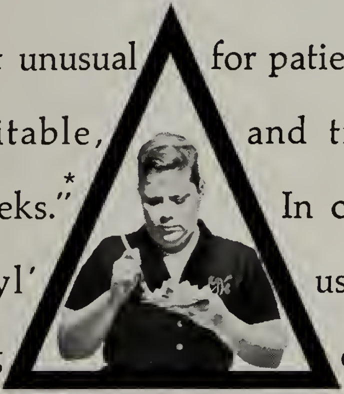

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**Matlin, E.: The Obvious in Obesity, Clin. Med. 8:1071 (June) 1961.*

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BOOK REVIEWS

A Study of Psychophysical Methods for Relief of Childbirth Pain. C. Lee Buxton, M.D. Price, $4.75. Pp. 116. Philadelphia: Saunders, 1962.

Continuing advances in knowledge and technique have conquered many of the physical problems relating to the safe delivery of a child. Since 1933 when Dr. Grantly Dick Read published his first work, "Natural Childbirth," there has been an increasing awareness of the psychophysical methods useful in relieving the pain and rigors of childbirth.

These methods have helped to insure the safety of the newborn and have helped the mother through a new and trying situation.

Dr. Buxton has made a survey of these psychophysical practices. This study represents a report of his impressions recorded in 30 clinics in the United States and Europe.

He has included discussions of the conditioned reflex methods, the Grantly Dick Read and Helen Heardman methods, autogenic training and hypnosis, as well as combinations of these techniques. The value of conditioning exercises and of prenatal classes is also discussed.

The role of the father in prenatal care and at the time of delivery has been noted and evaluated. The desirability of the presence of the father in the delivery room at the time of birth is also discussed.

Dr. Buxton has made an excellent contribution to this field of study, and his conclusions are well worth noting. He has considered the limitations of these methods imposed by time, lack of facilities and of trained or sympathetic personnel.

Psychotherapeutic and psychophysical methods have become an important part of prenatal care. It is reasonable to assume that the role of these methods will become more important in the future. This book is therefore recommended to anyone who has any part in the care of the obstetric patient.

Allen E. Henkin, M.D.

Medical Department, United States Army: Preventive Medicine in World War II. Volume V. Communicable Diseases Transmitted through Contact or by Unknown Means. Colonel John Boyd Coates, Jr., M.C., Editor-in-Chief; Ebbe Curtis Hoff, Ph.D., M.D., Editor for Preventive Medicine; Phebe M. Hoff, M.A., Assistant Editor. Prepared and published under the direction of Lt. General Leonard D. Heaton, The Surgeon General, United States Army. Price, $5.75. Pp. 530. Washington 25, D. C.: Superintendent of Documents, U. S. Government Printing Office, 1960.

Volume 5 in a U. S. Army series on Preventive Medicine in World War II considers communicable diseases. It is a series of papers prepared more with historical rather than current scientific perspective. Thus, many parts make interesting reading but are not complete reviews of subjects treated.

The largest segment of the volume treats the problem of venereal disease in various theaters of operation. The reports in this section reflect the magnitude of this problem in virtually all theaters of war and the frustration engendered among control officers. The depths of frustration are reflected in such reports on human dignity as the establishment of "tolerated women's villages next to Army camps in Liberia, where, if found free of venereal disease they were photographed and tagged and permitted to enter the village. The soldiers were permitted to enter these villages but passes to distant native communities were not free." Another example in Italy spoke of "amateur prostitutes." "It was not lust but necessity, not depravity of the soul but the surge of instinct to survive which led numerous women into the ranks of the amateur prostitutes on whom regulatory legislation had little or no effect." The volume also comments concerning the military men themselves on whom "moral conviction, social persuasion, demonstration of the dangers of disease and means of prevention were only moderately effective and the effectiveness varies some with the customs in the country and with the composition of the troops." For example, the venereal disease rates were among the lowest in Hawaii both before and after the closing of the official houses of prostitution. In fact, the rate dropped after their closure. The rates were among the highest among Negro troops in Liberia where the commanding officer reported "frank carelessness, laziness and disregard of health and regulations are strikingly in evidence."

Other sections of this book do not deal so extensively with the health problem concerned as the chapters on venereal disease. The section on leptospirosis reviews the significance of this problem for the military and poses the epidemiologic mystery surrounding its mode of spread. Schistosomiasis is presented as a preventable disease. Bullis fever is described as a newly discovered entity associated with fever, lymphadenopathy and rash, and probably spread by ticks.

Totally this volume will be of greatest interest to those who study military medical history. It is interesting general medical reading for any physician and should be included among the reading of any individual, military, medical or otherwise, who might be concerned with the problems of sex, venereal disease and morality among military men during wartime.

Robert H. Parrott, M.D.

Diagnosis and Management of Pain Syndromes. Bernard E. Finneson, M.D., F.A.C.S. Price, $8.50. Pp. 261. Illustrations by Barbara R. Finneson. Philadelphia: Saunders, 1962.

This is a concise, well written book with good illustrations. It describes a diverse group of pain syndromes, their diagnosis and treatment.

(*Continued on page 28*)

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Book Reviews

(*Continued from page 26*)

The subject, the treatment of pain, is of wide interest inasmuch as it touches all of the specialties and the general practice of medicine. This general interest pertains primarily to the problem of diagnosis and differential diagnosis and in this respect the book does not satisfy. The diagnostic discussions are not wide-ranging and differential diagnosis is barely touched upon. Much space is given to the description of technical neurosurgical procedures and difficult alcohol blocks, which are of interest only to the neurologist.

The book is addressed primarily to the neurosurgeon. The well known methods of treatment are adequately reviewed. There is a need for a more critical evaluation of these methods than is presented in this monograph. It is disappointing to find histamine desensitization still recommended as a treatment for "Horton's" headache, and certainly ligation of vessels in the neck and head for migraine has resulted in more failures than successes. The treatment of pain is an exceedingly complex and difficult subject to which the book will serve as an elementary introduction.

Donald A. Johnson, M.D.

Novak's Gynecologic and Obstetric Pathology with Clinical and Endocrine Relations, 5th ed. Edmund R. Novak, A.B., M.D., and J. Donald Woodruff, B.S., M.D. Price, $16.00. Pp. 713, with 761 illustrations, 31 in color. Philadelphia: Saunders, 1962.

Novak's textbook on obstetric and gynecologic pathology has again been revised; it remains essentially Emil Novak. The organization of the material is basically the same, beginning with the vulva and working its way up the genital tract.

An attempt has been made to further relate the endocrine and clinical aspects of gynecologic disease to its basic pathology. This reviewer would prefer the authors to limit the book to pathology and leave the clinical material to the many excellent texts which have been published on clinical obstetrics and gynecology.

Dr. John K. Frost has contributed an excellently illustrated chapter on cytopathology. In addition to discussing the use of cytopathology in cancer detection, its use in understanding the individual's endocrine status and chromosomal makeup is emphasized. Insight into the complex problems of sex determination, intersexuality, hermaphroditism, and the patient's response to various forms of therapy is gained from the use of this tool. Papanicolaou's multichromatic stain technique is most widely used. More recent techniques, such as Riva and Turner's fluorescent rapid 10-second method, are omitted.

Although the book is generally very well illustrated with both gross and microscopic photographs, some of the old drawings which have been carried forward from as far back as 1896 should be replaced with actual photographs of the diseases illustrated.

The text is highly recommended for medical students, interns, and residents in obstetrics and gynecology.

William Tenenblatt, M.D.

Clinical Pathology: Application and Interpretation, 3rd ed. Benjamin B. Wells, M.D., Ph.D. Price, $9.00. Pp. 541, with 24 illustrations. Philadelphia: Saunders, 1962.

This, the third edition of Dr. Wells' excellent book on Clinical Pathology, has for its primary objective the relating of clinical pathology procedures to the patient. In the foreword, Dr. Wells emphasizes this point very strongly by stating that "most all medical practice is still conducted in a one-to-one relationship of physician to patient." This concept pervades the whole book, which covers the entire field of clinical pathology.

The author points out that medical technologists today have much better training than in previous years, and because of the skills developed and the supervision that pathologists give the work, results are considerably more reliable. But he emphasizes the necessity of quality control in the clinical laboratory, a factor which is so frequently overlooked and yet so vitally necessary for reliable results. A pathologist-trained clinical pathologist together with well-trained technical personnel is something that the laboratory of today cannot be without. An overloaded laboratory or one that uses unreliable supplies and equipment cannot be trusted.

The book is divided into 10 chapters covering infectious diseases, diseases of the gastrointestinal system, diseases of the respiratory system, diseases of the cardiovascular system, diseases of the urinary tract system, diseases of the blood, metabolic and endocrine disorders, clinical laboratory studies in surgery, clinical laboratory studies in obstetrics, and a final chapter on specific laboratory procedures.

At the end of the book there is a table of normal values for all of the commonly used procedures, together with a study guide on methods. This guide is primarily an index for the student who wishes to review material on certain subjects and might be of some help to the medical student or resident who is taking board examinations.

The volume is primarily a discussion of the various diseases and conditions to be investigated, and minimizes the details of any procedures involved. From this point of view it constitutes an excellent desk reference for the practicing physician.

Oscar B. Hunter, Jr., M.D.

NEW AND FORTHCOMING BOOKS

ATLAS OF CONGENITAL HEART DISEASE by **Frank E. Sherman,** *Associate Professor of Pathology, University of Pittsburgh Medical School; Chief Pathologist, Children's Hospital, Pittsburgh.*

Dr. Sherman has developed a special kind of atlas——special because it is based on a specific group of more than 500 autopsy specimens carefully compiled from the Heart Museum at the Children's Hospital, Pittsburgh. It is a detailed study of gross anatomic observations of congenital heart disease, with emphasis on less frequent lesions and on not-so-well understood aspects of the common lesions.

Published by LEA & FEBIGER *275 pages 150 illustrations* **$10.00**

A CLASSIFIED BIBLIOGRAPHY OF GERONTOLOGY AND GERIATRICS, SUPPLEMENT TWO by **Dr. Nathan W. Shock,** Chief of the Gerontology Branch of the National Heart Institute and the Baltimore City Hospital.

This supplement makes available in a convenient form all of the most recent (1956–1961) references in the world literature in the field of gerontology and geriatrics. The same general plan and format have been followed in the present volume as in the original Bibliography (1900–1948) and Supplement One (1949–1955)

Published by STANFORD UNIVERSITY PRESS *About 640 pages* **$10.00**

MEDICAL GENETICS by **Widukind Lenz,** *Professor of Genetics, Hamburg University; translated from the German by Elisabeth F. Lanzi.*

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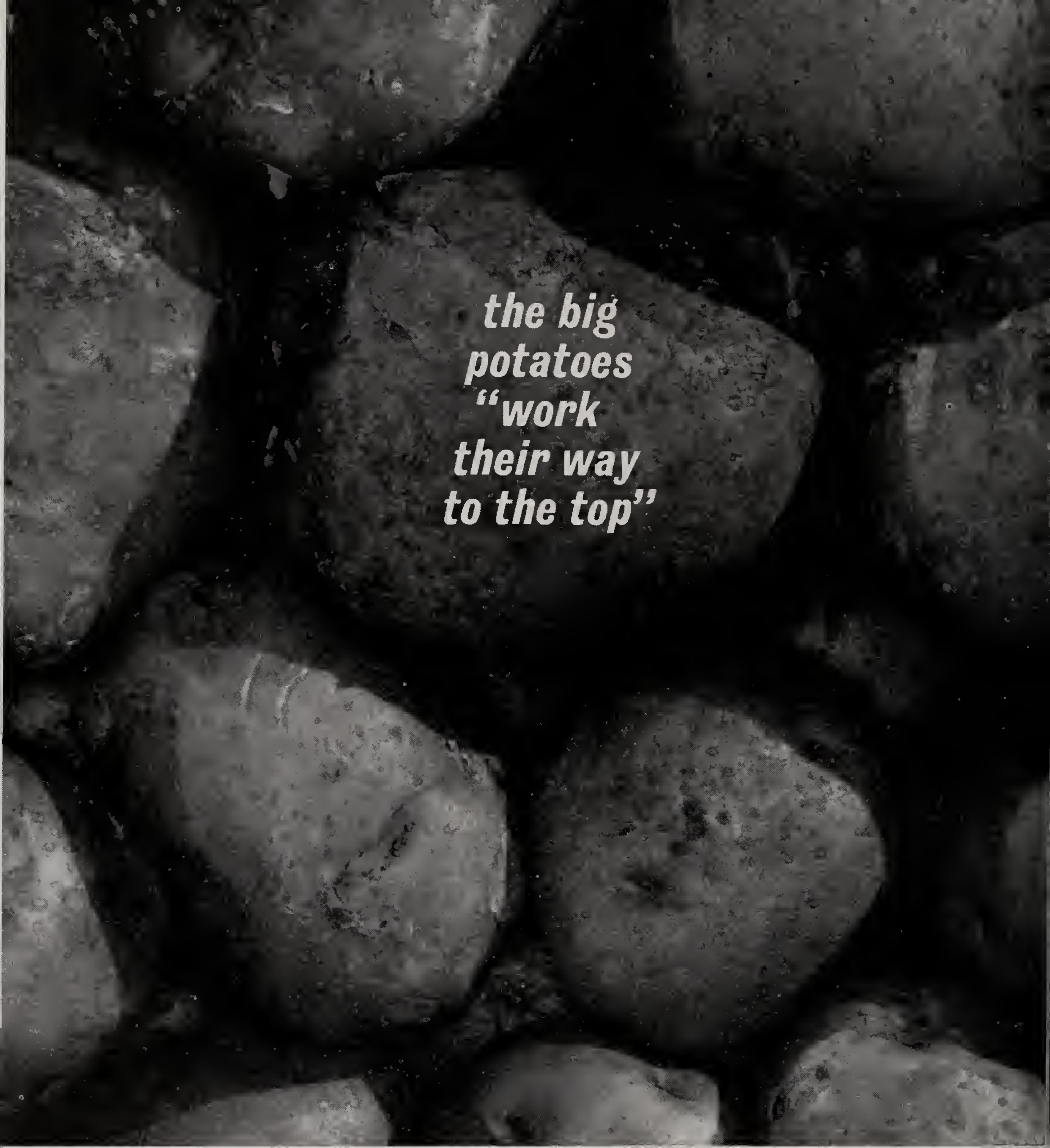

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The Biochemistry of Inheritance*†

MALCOLM M. MARTIN, M. D., M. R. C. P.

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THE STUDY OF HUMAN GENETICS is of interest to everyone. Man can live happily without ever having occasion to think about the breeding of animals or plants, but he can hardly fail to reflect sometimes upon his own origin. Moreover, with the increasing danger of exposure to ionizing radiation in the atomic age there is widespread speculation about the likelihood of mutations. Information on this question is difficult to obtain and puzzling to evaluate. Only a sound knowledge of the basic concepts of genetics can further understanding.

From his observations on alkaptonuria, cystinuria, albinism and pentosuria, Sir Archibald Garrod developed the concept of "inborn errors" which he proposed in his Croonian lectures to the Royal College of Physicians in London in 1908 and published in the form of a monograph in 1909. Garrod grouped these disorders together because they had certain characteristics in common. In all conditions the onset of the abnormality could be dated to the first few days or weeks of life, particularly if an effort was made to do so. A familial incidence was present in a considerable number of cases. Another characteristic feature was the frequency with which these disorders occurred among the offspring of consanguineous marriage. Finally, all of them were relatively benign and compatible with a normal life expectancy.

Half a century later rapid progress in the basic sciences lent support to what was, by necessity, a supposition in Garrod's time. The original 4 inborn errors have now increased to well over 100, many of which are not benign. We have learned not only how many of these conditions are transmitted from one generation to another, but also the basic biochemical mechanisms responsible for some of them.

Since cellular division is initiated by changes in the nuclei, attention, therefore, became focused early on their chemical composition. There is much experimental evidence to suggest that the genetic apparatus of the cell is located within the chromosomes, which are structures within the nucleus. The latter are principally composed of desoxyribose nucleic acid (DNA), whereas ribose nucleic acid (RNA) is confined to the cytoplasm. DNA is now considered to be the genetic material, i.e., the transmitter of genetic information.

Proof that DNA constitutes the genetic code is still lacking. However, there is a good deal of circumstantial evidence for this concept. DNA is confined to the chromosomes, and the amount of DNA per chromosome is constant. Haploid cells (cells with half the number of chromosomes) contain half as much DNA as diploid cells. DNA is species specific. In the absence of cellular division DNA is stable as shown by isotope studies. With successive cell division, on the other hand, DNA synthesis can be shown to follow a predictable change in radioactivity. DNA reformation is inhibited by high energy radiation. Further evidence that DNA is the genetic material is derived from the transformation of nonencapsulated pneumococci to encapsulated ones by injection of DNA from an encapsulated strain. This transformation can be prevented by desoxyribonuclease.

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Similar experiments have led to the conversion of penicillin-sensitive to penicillin-resistant strains. The most ingenious experiments were those of Hershey and Chase.[1] These workers labeled phage DNA with P^{32} and the phage protein with S^{35}. They then showed that when the phage particles are adsorbed by sensitive bacteria DNA is "injected" into the bacterial cell, whereas the protein coat remains outside. Removal of the protein coat does not alter the course of the infection.

The 3-dimensional structure of DNA has been elucidated by combined X-ray diffraction and stereochemical studies.[2] DNA appears to consist of 2 helical chains of alternate phosphate and desoxyribose molecules, linked by pairs of nitrogen bases which project from the sugar molecules on each chain. The base pairs, 1 a purine (adenine or guanine) and 1 a pyrimidine (thymine or cytosine), are linked by hydrogen bonds. Chemical analysis from many species has shown the amount of adenine and thymine to be about equal, as are the amounts of guanine and cytosine. In contrast, the ratios of adenine to guanine and thymine to cytosine vary considerably from species to species. In recognition of their fundamental contribution to the molecular structure of DNA and its relationship to medical genetics, Watson and Crick were recently awarded the Nobel Prize in Medicine.

The DNA molecule is extremely thin and long, and its molecular weight has been estimated in the region of 100,000,000. The DNA from 1 human chromosome when stretched out as a single fiber would extend for 5,000 miles. By changing the position of individual purine and pyrimidine bases, the sequence of the base pairs along the chains can be varied. In the present state of our knowledge it has been claimed that it is the particular linear sequence of the base pairs that constitutes the genetic code and determines not only whether a cell will develop into man or mouse, but also into what type of man or mouse. The genetic code is passed on by replication of DNA. During cellular division the double helix unwinds and the 2 DNA chains separate. Each chain then attracts from its environment the appropriate bases (adenine-thymine and guanine-cytosine) to build 2 identical copies of the original double helix. In this fashion all cells of the organism receive exact duplicates of the chromosomes, and hence, the genetic material as found in the parent cell.

Evidence is accumulating that the principal function of DNA is the control of protein synthesis. It is believed that different sequences of the 4 nucleotide bases in the DNA impart the genetic information via a transfer system (messenger RNA) to protein-forming particles (ribosomes) in the cytoplasm. The broad outline of the relationship between a specific protein and its controlling genetic elements is relatively simple: a linear sequence of specific nucleotide bases in the DNA molecule determines the linear sequence of specific amino acids which characterize each protein. The exact mechanism whereby this is carried out, however, remains a complete mystery and constitutes one of the most exciting enigmas in biology today. The problem to be solved is the manner in which the 4 nucleotide bases determine the specific order of the 20 amino acids of which all proteins are composed. It has been proposed that 3 or 4 adjacent nucleotide bases of DNA specify the insertion of a given amino acid into the protein molecule. Another problem to be solved is the regulation of synthesis of specific proteins in different cells. All cells carry the genetic information for the synthesis of all protein, yet hemoglobin is synthesized only by erythropoietic bone marrow, insulin only by the pancreatic islet cells, etc. It has, therefore, been suggested that specific DNA sequences not only determine how a protein is made but also contain the code where this is to take place.

A gene has been defined as the basic ultramicroscopic unit of heredity capable of producing a definite demonstrable trait in the phenotype. Biochemically speaking, a gene is best defined as that sequence of nucleotide bases necessary for the formation of a specific polypeptide chain. Some proteins are composed of only a single polypeptide chain and, therefore, require only 1 gene for their construction. Other proteins are composed of several polypeptide chains and hence are believed to require a gene for each chain. Regulator genes are also necessary to determine where the particular protein is to be made and where not. Thus, the original 1-gene-1 protein theory[3] has become more sophisticated and has given way to the 1-gene-1 polypeptide theory. Estimates of the order of size of a gene range from several hundred to several thousand nucleotide base pairs.

Apart from proteins the body is composed of fats and polysaccharides, the synthesis of which is also under genetic control. Current theories of gene action in relation to the formation of nonprotein substances imply that it is the protein enzymes regulating the above which are under direct genetic control.

Changes in the structure and chemical composition of DNA called mutations occur spontaneously with very low but finite probability. Such alterations may result from exposure to ionizing radiations, chemicals, drugs or, as in most cases, from as yet unknown causes. If mutations occur in somatic cells and not germ cells, abnormal cell metabolism or perhaps neoplastic changes may result. Such mutations will die with the affected individual. When mutations occur in gametes they are of greater significance from a genetic point of view, since the mutant genotype and its effects will be transmitted to the next generation.

Four kinds of change can conceivably occur in genetic material: (1) substitution of 1 particular nucleotide base (thymine, cytosine, adenine or guanine) for another, (2) loss of 1 or more bases, (3) increase in 1 or more bases, and (4) change in position of 1 or more bases. All of these change the linear sequence of nucleotides and hence can affect the composition or rate of production of the particular protein controlled by the changed region.

Losses of genetic material are known as deletions and may involve as little as 1 base pair or as much as an entire chromosome. Increases in genetic material are known as duplications and again may vary from 1 base pair to a chromosome. Changes in position of genetic material are called translocations if the involved part is moved to an entirely new area, or inversion if the segment is simply displaced within the same chromosome. If the changes are extensive they may be detected cytologically. However, most hereditary diseases are caused by minute changes called point mutations which are beyond the resolving power of even the most powerful electron microscope.

The effect of a discrete mutation in the DNA code may result in a qualitative change in the protein, the synthesis of which is under the control of the area affected. Thus, as in the case of most abnormal hemoglobins, the mutation causes substitution of a single amino acid in the protein molecule. The work of Pauling and co-workers[4] and of Ingram[5] has shown that sickle-cell anemia results from the substitution of valine for glutamic acid in 1 of the 26 peptides that make up the hemoglobin molecule. Since the charges carried by these 2 amino acids differ, the explanation is afforded for the original observation of the difference in electrophoretic mobility exhibited by the abnormal hemoglobin. Clinically it permits a clear understanding of the sickling phenomenon and explains the development of the anemia, hepatomegaly, and other features of the disease. Epidemiologically it explains the population pressures responsible for the selection of certain groups in the malaria-infested areas of Africa and Asia.

Apart from qualitative changes, alterations in the DNA code may also be reflected in complete failure of protein synthesis or in a change in synthetic rate.

Mutations affecting larger segments of a chromosome or duplications of chromosomes might be expected to cause multiple anomalies, since many different genetic regions influencing many different proteins would be affected. Characteristically, in the cytologically detectable chromosomal aberrations the patients are afflicted with multiple congenital abnormalities. The loss of the pair to the X chromosome in gonadal dysgenesis (Turner's syndrome) is commonly associated with short stature, webbed neck, micrognathia, broad chest, congenital heart and kidney lesions, to mention but a few, in addition to absence of the ovaries. Similarly the duplication of a whole chromosome, as in the case of trisomy 21 (Down's syndrome, mongolism) results in mental retardation, short stature, characteristic features, bone changes, etc.

That genetic mutations alter protein molecules led to the concept of molecular disease, according to which a genetically abnormal molecule may produce a characteristic disease. However, disease need not result if the mutant protein can carry out its specific function in spite of its altered physicochemical make-up. Many such examples are known (various transferrins, haptoglobins, and others).

When the genetically abnormal protein is an enzyme, the molecular disease may manifest itself as an inborn error in metabolism caused by failure of an enzymatic reaction. The product of an enzymatic reaction may be of importance for normal cell function and its lack show up as a deficiency disease, e.g., congenital adrenal hyperplasia or familial goitrous cretinism. The product may be a precursor for another reaction, so that the metabolic effect of a single mutation in such a disorder may indirectly affect a variety of other enzymatic reactions, leading to multiple disturbances in metabolic sequences and defective cell function, e.g., phenylketonuria, galactosemia, hyperlipidemia, cystinosis, and many other disturbances of intermediary metabolism. All genetic diseases due to single gene mutations probably are molecular diseases or inborn errors of metabolism, although the basic molecular defect has not been clearly defined in many instances. The concept that a fundamental lesion may cause many different effects widespread throughout the organism is of the utmost importance for the understanding of such disorders.

The great variability in expression of different inherited metabolic defects and even in the manifestations of a single defect in different individuals is another area of great importance. Severity as assessed by the degree of incapacity of the affected subject may vary from asymptomatic to troublesome at times and even lethal. Many genetic mutations in fact may remain unknown because of their lethal effects upon the fetus and result in abortions.

Since inherited metabolic diseases cannot be cured in the true sense, the reduction in morbidity becomes mainly a question of identification of specific enzyme defects and prevention of the metabolic derangement. Much progress is being made in this area, allowing recognition of heterozygous carriers of abnormal genes and providing methods for effective treatment in some of these conditions. For example, in phenylketonurics the serum phenylalanine levels can be lowered by means of a diet low in phenylalanine. Recent studies have indicated that institution of dietary management at an early age may prevent the brain damage otherwise present. Similarly, the exclusion of lactose from the diet of galactosemic infants may prevent the symptoms and signs of this disorder. Thus, the prevention of mental retardation by biochemical means has become a reality, and this type of approach may well open the doors for the proper treatment of other forms of mental defects in children.

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Primary Mixed Tumors of the Submaxillary Gland

WILLIAM E. BEAVEN, M. D.

Washington

ALTHOUGH PRIMARY MIXED TUMORS of the submaxillary gland have been described in the literature for over 100 years very little clinical information can be found that is based on an adequate number of cases. Although it is true that innumerable series of cases have been reported on the mixed tumor group of all 3 major salivary glands, the relative infrequency of tumors of the submaxillary gland found in any one study is such as to almost always preclude a clinical appraisal of any significance.

Moreover, studies specifically devoted to the clinical aspects of these tumors are exceedingly rare. Of over 300 references to the early European literature pertaining to various aspects of the mixed tumor group Heineke[1] could cite but 4 such studies published prior to 1913. Thirteen years later McFarland[2] was able to find only 2 more of an additional 75 articles on the mixed tumors reported over the interim. From the American literature, with but one exception[3] no major clinical review of mixed tumors of the submaxillary gland can be found recorded since Francis Wood's first report[4] on the mixed tumor group in 1904.

Not surprisingly, this lack of material has led to a marked divergence of opinion regarding many of their clinical characteristics, particularly to those with reference to their histologic counterparts in the parotid gland. Guns and Picard[5] reported malignancy in 90 per cent of a group of submaxillary mixed tumors and only 10 per cent in a comparable group of parotid gland tumors. Martin[6] stated that about 25 per cent of tumors of the submaxillary gland were benign, while about an equal percentage of parotid gland tumors were malignant. Minet[7] believed that the tendency for tumors of the submaxillary gland to undergo malignant degeneration was insignificant. Stated in another way, Hertzler[8] thought that the parotid gland group of tumors were more likely to become malignant, presumably because of the gland's greater complexity in structure.

Because few of these facts and opinions are based on a statistically adequate amount of information, a reëvaluation of these tumors seemed appropriate by means of a collective study. In addition to the material presented are 8 previously unreported cases of mixed tumors of the submaxillary gland taken from the files of Doctors Hospital (table 1).

Historical Data

One of the principal reasons for the lack of emphasis in defining the clinical features of these tumors can be traced to a point in their historical development by the earlier investigators.

Albohm[9] states that the first description of a primary mixed tumor of the submaxillary gland was reported in 1855, but it was not until 1859 that its complex histologic structure was recognized and defined by Billroth.[10] In 1885 Perachaud[11] reported the first 2 cases of cancer of the submaxillary gland and, with the subsequent publication of an additional 12 cases, the first monograph on the subject was presented by Jouliard[12] in 1887.

Shortly thereafter sharp controversy arose as to whether or not any of the mixed tumors were of actual salivary gland origin. Hence, it became fashionable to classify tumors for study according to their histopathologic characteristics only, with little regard to anatomic location. So intense was this controversy that its effect was to influence clinical attitudes for almost the next 50 years. By 1926 McFarland,[2] in his first study of the mixed tumors, entitled his article "Ninety Tumors of the Parotid Region," stating that the few tumors found in the submaxillary gland region would be considered simply as those occurring "in the neck." Although evidence was accumulating at the time to reinstate the origin of the mixed tumors from salivary gland parenchyma, it was not until 1937 that Hertzler[8] could state that in his opinion mixed tumors of the 3 major salivary glands should be "treated separately as distinct clinical entities."

Clinical Features

Classification. In order to correlate data from various sources it is axiomatic that a uniform

TABLE 1: Data on Eight Cases of Mixed Tumors of the Submaxillary Gland at Doctors Hospital, Washington, D.C.

	Age	Sex		Primary	Recurrent	Side of Neck	Symptoms			Recurrences within 5 Years Postoperatively	Survived 5 Years Postoperatively
		M	F				Duration of Symptoms (Years)	Rapid Enlargement	Pain or Tenderness		
Benign											
Case 1. DH no. G9365	58	×		×		L	2	0	0	No follow-up	
Case 2. DH no. H8400	38		×		×	R	6	+	0	No follow-up	
Case 3. DH no. L348	63	×		×		L	4	+	0	0	+
Case 4. DH no. L5238	21		×	×		L	3	0	+	0	+
Case 5. DH no. L6320	39		×	×		L	1½	0	+	0	+
Case 6. DH no. M1445	79		×	×		L	?	–	–	0	+
Case 7. DH no. 06627	44		×	×		L	½	+	0	0	+
TOTAL OR AVERAGE: (benign)	49	2	5	6	1	6L	3			0	5
Malignant											
Case 8. DH no. 05424	54		×	×		R	2	+	+	0	+

nomenclature be used. Because of the array of terms and histologic interpretations appearing in the older European literature none of this material was thought to be satisfactory for the purpose of this study. Instead, only the more recent studies of major salivary gland tumors that could be adapted to a classification similar to that devised by Foote and Frazell[13] were used (table 2). In formulating clinical aspects of the mixed tumor group the number of cases used was determined by the available material and also the number of cases a particular clinical feature seemed to require to have statistical significance.

A total of 303 tumors from 9 individual studies are classified in table 2. Of the total, 171 (56 per cent) were considered benign and 132 (44 per cent) malignant (table 3).

Of the 171 benign tumors all were considered to fall into a mixed tumor category. Not a single instance of another type of solid, epithelial (and

TABLE 2: Classification of Primary Submaxillary Gland Tumors
(Modified from Foote and Frazell)

Author	Total Cases	Benign	Malignant						
		Benign Mixed Tumor (Primary)*	Malignant Mixed Tumor	Mucoepidermoid Carcinoma	Squamous-cell Carcinoma	Adenocarcinoma (Various Types)	Adenoid Cystic Carcinoma (Cylindroma)	Miscellaneous	Total Malignant
Foote and Frazell[13]	107	47	11	8	13	5	17	6	60
Dockerty and Mayo[3]	84	51	0		2	3	22	6	33
Taylor[14]	34	16	0			12		6	18
Singleton[15]	9	7	2						2
Rawson[16]	17	12	0		2	1	2		5
Swinton[17]	10	10	0						
Albohm[9]	13	3	6		1		3		10
Ward and Hendrick[18]	21	18	3						3
Doctors Hospital Series	8	7	0				1		1
TOTAL	303	171	22	8	18	21	45	18	132

* No other reported benign tumors.

benign) tumor was recorded, including the adenolymphoma (Warthin's tumor) and oncocytoma. No examples of connective tissue tumors such as benign hemangiomas and neurilemmomas were found.

Of the 132 malignant tumors, only 22 (16 per cent) were considered to be of the "mixed" variety (although whether or not these tumors were malignant from the outset or represented malignant degeneration from a previously benign tumor is an issue irrelevant to the purpose and scope of this study and hence is not discussed).

Of the remaining 102 malignant tumors, histopathologic types were distributed as follows: adenoid cystic carcinoma (cylindroma), 45; squamous-cell carcinoma, 18; adenocarcinoma, 21; muco-epidermoid carcinoma, 8; miscellaneous, 18.

TABLE 3: Distribution Ratio of the Mixed Tumors in the Parotid and Submaxillary Glands

(Sublingual Gland: Approximately 1 per cent in all 3 series)

Author	Parotid Gland Tumors	Submaxillary Gland Tumors	Per cent of Total
Foote and Frazell[13]	766	107	12.1
Taylor[14]	241	34	12.3
Lathrop[19]	183	26	12.4

Thus, from these figures, it may be seen that all benign tumors of the submaxillary gland are of the "mixed" type and constitute slightly more than half (56 per cent) of all tumors originating within the gland. Since 193 of the total 303 tumors recorded are considered "mixed" as well (either benign or malignant), it may also be seen that approximately two-thirds (63 per cent) of all primary tumors of submaxillary gland origin are of the "mixed tumor" type.

Of the 132 malignant tumors, 16 per cent were considered to be of the "mixed" variety. Slightly over a third of these tumors (34 per cent) were classified as cylindromas.

Incidence. The relative incidence of mixed tumors occurring in the 3 major salivary glands is seen on table 3: parotid gland, 87 per cent; submaxillary gland, 12 per cent; sublingual gland, 1 per cent. Figures for the sublingual gland are not included since their numbers are too few to have statistical significance. The ratio between tumors of the parotid and submaxillary gland appears very significant, since there is less than a 0.5 per cent variation in the figures from 3 individual studies of over 1,300 tumors.

The absolute or true incidence of mixed tumors of the submaxillary gland is difficult to compute because of the various methods of recording. Schreiner and Mattick[20] observed 7 out of a total of 6,695 patients (0.1 per cent) with various types of neoplasms. Pack and LeFevre[21] were able to find 20 of 3,827 tumors (0.5 per cent) of the oral cavity, upper air passages, and adjacent regions. The incidence seen at the Mayo Clinic[3] is reported to be 1 out of 20,000 clinic admissions.

Miscellaneous features. The age range in which the tumors develop is extremely variable. Schreiner and Mattick calculated the median age of patients with benign tumors to be 37 and with malignant tumors, 51. Their youngest patient was 12 years old, the oldest 79.

The distribution of mixed tumors of the submaxillary gland between the sexes is about equal. Of 117 tumors listed 60 occurred in females, 57 in males. In both sexes benign tumors predominated. These findings are interesting, in view of the fact that these tumors have been thought to occur far more frequently in the female than in the male.

Symptoms. Symptoms are few, never pathognomonic, but almost invariably include the complaint of a "mass" or swelling in the submandibular region. In the benign group of tumors pain or tenderness is rarely noted, but in the malignant group pain is said to occur in over 75 per cent of cases.[13] Curiously, the onset of symptoms can be related occasionally to the development of an upper respiratory infection.

The duration of symptoms prior to medical observation or operation as reported by Singleton[15] was found to be 7.8 years for benign tumors and 3.5 years for malignant tumors. This is an extremely variable figure, however, which can be seen in the series of cases of Doctors Hospital (table 1). Chiari[22] reported a case that was observed for a period of 35 years before showing evidence of malignant degeneration.

Treatment

Treatment consists of surgical excision, although the extent of which, as well as adjunctive measures employed (i.e., pre- and/or postoperative X-ray therapy, chemosurgery, radon seed implantation, etc.), has varied considerably. Recurrent rates of tumors excised by simple enucleation, "shelling out," or "resection" of the tumor only have been reported as extremely high (McFarland,[2] 36 per cent, Dockerty and Mayo,[3] 21 per cent). For this reason a more "radical" operation of excising the entire gland has been advocated as the procedure of choice during the initial surgery.

To evaluate the effectiveness of this extended surgery, results from 6 studies are presented in table 4. Of a total of 69 patients with primary mixed tumors, 38 were benign and 31 malignant.

TABLE 4: Results Following Surgery of Primary Tumors

Author	Total Cases	Benign				Malignant			
		Total Follow-up	5-Year Survivals	Died	Recurred	Total Follow-up	5-Year Survivals	Died	Recurred
Dockerty[3]	31	24	21	3	0	7	2	3	5
Swinton[17]	6	6	2	0	0				
Taylor[14]	10					10		10	
Albohm[9]	12	3	1	0	0	9	1	5	6
MacFee[23]	4					4	2	2	2
Doctors Hospital Series	6	5	5	0	0	1	1		
TOTAL	69	38	29	3	0	31	6	20	13

Of the 38 patients with benign tumors, not one recurrence was reported within a 5- to 10-year period following surgical excision. Three patients were said to have died, and 29 were found to be well and free from disease 5 years postoperatively.

Of the 31 patients with malignant tumors, 13 (42 per cent) developed recurrences, while only 6 patients (16 per cent) survived the operation for a period of 5 years.

Discussion

Because our knowledge of mixed tumors has been derived mostly from studies of those occurring in the parotid gland, it seems pertinent to compare certain clinical features of these tumors with analogous tumors of the submaxillary gland.

Although the literature reveals few discrepancies in features (age of onset, age range, sex ratio, and duration of symptoms) between tumors of the 2 salivary glands, the incidence of malignancy as well as the frequency with which benign mixed tumors undergo malignant degeneration have been almost universally thought to be far greater in those arising in the submaxillary gland.

The figures shown in this report reveal this to be hardly the case. In Foote and Frazell's series[13] of 712 parotid gland tumors, 261 (37 per cent) were considered malignant. Of 177 parotid gland tumors listed by Albohm,[9] 71 (40 per cent) were so considered as well. As may be seen in table 2, the percentage of malignant lesions in 303 comparable submaxillary gland tumors is only slightly higher (44 per cent).

In regard to the degree that benign mixed tumors undergo malignant degeneration in the 2 salivary glands, there is almost no difference. Of the 193 mixed tumors of the submaxillary gland listed in table 2, 11 per cent were recorded as malignant mixed tumors, while of 493 mixed tumors of the parotid gland recorded by Foote and Frazell,[13] 9.3 per cent were so considered. This is definitely in direct conflict with prevailing opinions on the matter.

One of the best examples of these appeared in a recent article by Valone[24]: "It is interesting to note with regard to degeneration of mixed tumors that the smaller the gland of origin of the mixed tumor, the higher the percentage of malignant degeneration, i.e., the highest percentage being in those small ectopic mixed tumors and the lowest in the parotid gland, with that of the submaxillary gland being somewhere in between."

It has long been accepted that benign mixed tumors of all the salivary glands are prone to recur following surgical excision. The frequency of recurrence for those tumors of parotid gland origin has been reported by various investigators as follows: Schreiner and Mattick,[20] 20 per cent; McFarland,[2] 25 per cent; Benedict and Meigs,[25] 42.5 per cent.

Although the 38 cases of submaxillary gland tumors recorded in table 4 cannot be considered a statistically significant number, it is significant that not a single recurrence was reported 5 to 10 years following proper surgical excision.

Summary

From the data compiled on primary tumors of the submaxillary gland the following facts emerge:

Of all primary tumors occurring in the submaxillary gland, 56 per cent were considered benign. All benign primary tumors of the submaxillary gland are of the "mixed tumor" variety.

Of the malignant primary tumors, 16 per cent were considered "mixed," or 7 per cent of the total number of tumors compiled. Hence, 63 per cent of the total number of tumors are of the "mixed" variety, whether or not they were considered benign or malignant.

The incidence ratio of primary mixed tumors of the submaxillary gland relative to those occurring in the parotid gland is found to be 12 per cent.

The sex ratio of mixed tumors of the submaxillary gland is about equal and the majority of tumors in both sexes were considered benign.

Contrasting the incidence of malignancy as well as the degree with which tumors undergo malignant degeneration in both submaxillary and parotid glands, little significant difference could be found.

The incidence of recurrence of benign primary submaxillary gland tumors following proper surgical excision was found to be nonexistent, indicating that there need be no recurrence rate for these tumors.

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Biologic Evaluation of Perfumes*

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IN PREVIOUS REPORTS[1] the results of dermatologic evaluation of perfume substances were presented following a series of animal and human skin studies, including usage tests. The present report expands the biologic evaluation technique to include, in addition to the previously mentioned studies, tissue culture and photosensitivity studies that have been carried out on additional chemically standardized perfume substances designated as Chemoderms®, each with a different but characteristic fragrance.

Materials

The perfumes studied were prepared by the research division of an aromatic chemical manufacturer† and bear the trademark Chemoderms. The code number and individual fragrance of each Chemoderm are shown in table 1.

TABLE 1: Code Numbers and Fragrances of Chemoderms

Chemoderm Code	Fragrance
995A	Magnolys floral
995B	Rose
995C	Lilac floral
995D	Mixed floral
995E	Aldehydic floral
981	Flowery Lily
982	Flowery Rose
983	Red Rose
984	Fern Lavender
985	Floral Honeysuckle
986	Rose flowery
987	Lilac
988	Woody Rose aldehydic
989	Flowery, powdery, aldehydic
990	Woody, flowery, powdery
991	Flowery Hyacinth
992	Woody-fresh Citrus, flowery
993	Flowery Lily of the Valley
994	Fresh Orange flower

The Chemoderms were dissolved in diethylphthalate for evaluation of eye irritation in rabbits, skin sensitization in guinea pigs, and patch tests in humans. For the usage tests the Chemoderms were incorporated in 5 cosmetic preparations—a cleansing cream, a night cream, a lipstick, a hand lotion, a liquid, and cake powder makeup. The cosmetic preparations used were supplied by a widely known collaborating cosmetic manufacturer whose products have been used for many years and sold throughout the world, thus insuring, as nearly as possible, the introduction in the study of only one variable, the perfume. The Chemoderms were added during the company's standard manufacturing procedure.

Animal Studies

Eye Irritation Test

Eye irritation was evaluated by using 21 groups of 6 albino rabbits each, with 1 group of 6 animals serving as controls for the solvent. Each Chemoderm was formulated as a 1.0 per cent volume/volume solution in diethylphthalate, and 0.1 ml. of each diethylphthalate solution was instilled into the left eye of each of 6 rabbits. In 3 animals of each group the eye was irrigated with 20 ml. of water after 4 seconds, and the other 3 treated eyes were held closed for 30 seconds and not irrigated. Any irritation was graded and recorded according to the numerical scoring system of Draize.[2] The eyes of each animal were examined with a 2 per cent sodium fluorescein solution initially and again after 7 days following application of the Chemoderm solution. Observation of the eyes for gross signs of irritation was made at frequent intervals during the day of application and daily thereafter for 7 days.

Results. Slight conjunctival erythema, in some animals accompanied by slight lacrimation and lid edema, was present at 1 to 4 hours following application of the solvent diethylphthalate. Eye irritation scores varied from 2 to 8 during the first

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* From the Hazelton Laboratories, Inc., Falls Church, Va.

† Firmenich, Inc., New York, N. Y.

4 hours only, of a possible maximum total score of 20, according to the Draize scale.[2] The eyes of the animals receiving the Chemoderms showed similar findings, and the eye irritation scores did not differ from each other or from the solvent control. There were no differences between eyes that were irrigated and those that were not. The cornea and iris of each rabbit eye remained clear and showed no changes. It was concluded that these Chemoderms were not irritating to the rabbit eye.

Guinea Pig Skin Sensitization

Skin sensitization was evaluated by using 12 groups of 6 albino guinea pigs each, using a modified Landsteiner technique.[3] Each group of 6 animals was used for studying 2 different Chemoderms. Two control groups of animals were used, one group receiving the solvent diethylphthalate and a second group a known skin sensitizer, 1-chloro-2,4-dinitrobenzene. The Chemoderms were administered intradermally as 0.5 per cent solutions in diethylphthalate and the positive control as a 1.0 per cent solution in diethylphthalate. The animals were injected 3 times weekly at 48-hour intervals for a total of 10 injections. Ten to 12 days following the tenth injection a challenge dose was administered. For the initial and challenge injections a dose of 0.05 ml. was used. For the remaining 9 injections a dose of 0.1 ml. was used. The injection sites were examined for signs of irritation at 24 and 48 hours following each application.

Results. Skin sensitization was not produced in the guinea pigs by any of the Chemoderms. Local reactions to the diethylphthalate solvent, manifested by a blanched area surrounded by a zone of erythema, were present following each injection. The local response due to the solvent was present following injection of each Chemoderm-diethylphthalate solution and following injection of the 1-chloro-2,4-dinitro benzene-diethylphthalate solution, the positive control. Possible skin sensitization was induced in 3 of the 6 animals by the positive control material. It was concluded that these Chemoderms did not produce skin sensitization in guinea pigs under the conditions of the experiment.

Tissue Culture Studies

In vitro methods have been used by a number of workers[4, 5] as an aid to the evaluation of pharmacologic effects at the cellular level of a wide variety of materials. For this reason tissue culture studies were conducted on 5 of the Chemoderms to obtain some concept of the cytotoxic levels of these materials as compared with other types of topically applied materials or as controls. These substances were mineral oil, peppermint oil, and mercuric chloride. All materials were assayed for cytotoxic effects on human conjunctival cells (Chang, Microbiologic Associates) and on primary explants of chick heart fibroblasts.

Each material was added to Eagle's Minimum Essential Medium with 10 per cent human serum for the tests, using human conjunctival cells. The conjunctival cells were exposed to each material as soon as a sheet-like growth had developed in the roller tubes. Chick heart fragments were exposed to the effects of the materials incorporated into Basal Medium (Eagle) immediately after explanting the fragments in plasma clots directly on the wall of roller tubes. Both types of test cells were maintained in stationary roller tube cultures at a temperature of 34.5°C.

Where solubility permitted, all of the materials were evaluated for cytotoxicity at 4 dilution levels. Each material was solubilized with ethyl alcohol prior to incorporation into the appropriate fluid culture medium. The final concentrations of the materials studied were 0.05, 0.001, 0.0001, and 0.00001 per cent on a volume-to-volume ratio in all cases except that of mercuric chloride, which was prepared on a weight-to-volume basis. The per cent concentration of each material was converted to an equivalent weight-to-volume by calculation. The alcohol content of the experimental culture media as finally applied to the cells was approximately 1.0 per cent. Appropriate control cultures accompanied each group of experimental cultures.

The cytotoxicity of mercuric chloride was studied with balanced salt solution (BSS) as the solvent, as well as with alcohol as the solvent. The effect of mercuric chloride was studied at concentration levels of 1, 5, 10, 20, 30, 40, and 100 μg/ml. The test cells were examined with an ordinary light microscope for evidence of cytotoxicity.

Results. The results of these studies have been recorded in table 2 to indicate which, if any, of the dosage levels tested caused detectable cell damage or growth stoppage after exposure of the cells for 48 hours. A narrow range of dosage levels was used in this study and because of this failed to detect both degrees of cytotoxicity with all materials. Allowance has been made in the table by an appropriately placed "greater than" symbol (>) with respect to the dosage levels tested.

It will be noted from the tabulated data that, under the conditions of these studies, the 5 Chemoderms tested were tolerated by chick heart fibroblasts and human conjunctival cells maintained in vitro at dosage levels comparable to the tolerance level of peppermint oil and at considerably higher concentrations than could be tolerated by mercuric chloride.

TABLE 2: Cytotoxicity in Gamma per ml. of Culture Medium of 5 Chemoderms and Various Other Topically Applied Substances for Continuously Propagating Human Conjunctival Cells (Chang) and Explants of Chick Heart Fibroblasts

Substance	Tissue	Growth Stopped	Detectable Cell Damage
Chemoderm No. 995A	Conjunctival cells	460	>94
	Chick heart	460	>94
Chemoderm No. 995B	Conjunctival cells	475	95
	Chick heart	475	>95
Chemoderm No. 995C	Conjunctival cells	446	>89
	Chick heart	446	>89
Chemoderm No. 995D	Conjunctival cells	488	98
	Chick heart	488	>98
Chemoderm No. 995E	Conjunctival cells	455	>91
	Chick heart	455	>91
Mineral oil	Conjunctival cells	>82*	>82*
	Chick heart	>82*	>82*
Mercuric chloride (Alcohol)	Conjunctival cells	30	20
	Chick heart	40	30
Mercuric chloride (BSS)	Conjunctival cells	30	20
	Chick heart	40	20–30
95 per cent Ethyl alcohol	Conjunctival cells	>8,000	8,000
	Chick heart	>8,000	>8,000
Peppermint oil	Conjunctival cells	442	9–88
	Chick heart	442	>88

* Highest concentration tested—no detectable effects at this concentration.

Human Studies

Human Skin Photosensitization

Photosensitization studies were undertaken on 2 groups of human subjects. Each group consisted of 3 men and 5 women. Group A received skin applications to Chemoderms Nos. 995A–E, 981–4, whereas Group B received skin applications to Chemoderms Nos. 986 through 993. Natural oil of bergamot was used as the positive control. All exposures were made to sunlight. Preliminary pilot studies were performed on 2 males and 2 females with natural oil of bergamot and exposure to sunlight in order to work out basic values for concentration and exposure time. From this it was determined that the lag period (time from application to the skin and exposure to sun) and exposure time could vary from 15 to 45 minutes. The higher exposure time of 45 minutes must be used with great caution, since in 1 subject in the pilot study it produced severe vesiculation with bulla formation with the bergamot oil.

Following the pilot study the males in Groups A and B were given a 15-minute lag period and a 15-minute exposure time. The women in both groups were given a 45-minute lag period and a 35-minute exposure time. With the male subjects the low midback area was the site of application of the materials; with the females the upper thigh area was used as the skin test site, since neither of these areas is ordinarily exposed to sunlight. After 3 weeks the materials were again applied to the same skin test sites of both males and females, followed by exposure to sunlight, to determine if photosensitivity had occurred. The skin sites were exposed to sunlight of an average intensity of 514.5 Gm. calories per square cm.

Results. Under conditions of the procedure used, the application of the Chemoderms and subsequent exposure to sunlight did not produce any evidence of inflammation and/or pigmentation in either the males or females. Under the same conditions the control material, natural oil of bergamot, produced slight inflammation and subsequent pigmentation in all male subjects and in 9 of the 10 female subjects following the initial application. The repeated application of the materials after a 3-week interval and exposure to sunlight again showed that none of the Chemoderms elicited any responses, whereas the natural oil of bergamot produced pigmentation in all subjects.

Repeated Insult Patch Test

Patch tests with 19 Chemoderms as 2 per cent solutions in diethylphthalate, 4 times normal cosmetic product concentration, were conducted in human subjects. The solvent, diethylphthalate, was used as control. The procedure consisted of repeated patching of the materials, following a modified method of Shelanski.[6] This method involved applying a multiple closed patch containing each Chemoderm to the skin every other day, 3 times a week, until a total of 10 applications was made. At each application the Chemoderms were in contact with the skin for 24 hours, after which they were removed. Readings were made within 1 hour following removal. Two weeks following the last application of the initial 10 patches a challenge patch was applied to each subject following the same technique as previously described. Chemoderms Nos. 975A–E and 981 through 985 were patch-tested in the above manner on 44 female and 2 male subjects of age range 25 to 74. Chemoderms Nos. 995A–E, 981–9 and 991–4 were patch-tested on 43 female subjects of age range 20 to 60. Comparison of the reaction observations after the 10 consecutive patches and the reaction after the challenge patch allowed an estimation of the degree of skin irritation, skin fatigue, and skin sensitization.

The multiple patch used in this study consisted of a felt pad enclosed in a cellophane envelope with a circular opening in the center on which was placed 0.2 ml. of the Chemoderm solutions or the diethylphthalate. The patches were applied to the skin of the upper arm of each subject.

Results. None of the subjects developed skin responses to the Chemoderms or diethylphthalate. Under conditions of the procedure employed, primary irritation, skin fatigue, or skin sensitization were not observed.

Usage Test

The 19 different Chemoderm fragrances were incorporated into 5 basic cosmetic formulations consisting of lipstick, cleansing cream, night cream, hand lotion, and liquid and cake powder makeup. Four sets of these cosmetic formulations were prepared for the usage test in 4 panels of approximately 50 female subjects each. Table 3 shows which Chemoderms were used in the different cosmetic formulations and which were used by each of the 4 panels of subjects.

TABLE 3: Chemoderms Used by Four Panels of Subjects

Cosmetic Formulation	Chemoderm Numbers			
	Panel A	Panel B	Panel C	Panel D
Lipstick	995A	982	990	995B
Cleansing Cream	995B	981	986	993
Night Cream	995D	985	994	991
Hand Lotion	995E	984	987	989
Makeup (liquid or powder)	995C	983	988	992

Each panel of subjects was patch-tested prior to and after the usage test with each of the individual Chemoderms that were to be present in the cosmetics used. In the patch tests the Chemoderms were evaluated as 2 per cent solutions in diethylphthalate with a 48-hour closed patch according to the method of Schwartz-Peck.[7] After each subject received the initial patch there followed a 3-week usage period of the cosmetic formulations containing the Chemoderms. On conclusion of the 3-week use period a 14-day rest interval elapsed before the Chemoderms again were patch-tested on the subjects.

On initiation of the use period each subject was given typewritten instructions concerning the use of each of the cosmetics and instructed to use only the special cosmetics in place of her regular brand. Each subject was allowed a free choice of selection of 1 of 4 shades of lipstick of the same fragrance and to decide if she wanted to use liquid or cake powder makeup, or both, in 1 of 4 available shades of the same fragrance. She was instructed to use each cosmetic formulation at least once a day for 3 weeks and was given a form on which to record the actual number of times of use each day for each cosmetic. Each subject returned at weekly intervals during the use period for skin examination and subjective evaluation by a consultant dermatologist. Identical cosmetic formulations, unperfumed, were available for use, if necessary, in determining skin response.

Results. The initial patch was applied to 54 subjects in Panel A, 52 subjects in Panel B, and 50 subjects each in Panels C and D. There were no positive patch-test reactions in any of the subjects following the initial patch with Chemoderms in diethylphthalate.

Table 4 presents the number of times the cosmetic preparations were used by subjects of each panel during the 21-day usage period.

During the 21-day usage period there were 8 subjects in Panel A, 4 in Panel B, 6 in Panel C, and 3 in Panel D who presented complaints or findings associated with the use of the cosmetic formulations. Except for 2 subjects in Panel A and 1 subject in Panel B all complaints were of a subjective nature, which on examination showed no evidence of skin irritation. However, because of the complaints the subjects were further evaluated by additional patch-testing at the time of the complaint and by placing the subjects on identical, but unperfumed, cosmetics. The results of such evaluations were negative.

Two subjects in Panel A and 1 subject in Panel B did show some objective evidence of skin irritation during the usage period. In Panel A a 30-year-old subject showed a few acneform lesions on her face during the use period. Evaluation of this subject by patch test and re-use of the same cosmetics failed to show any type of skin response. The second subject in Panel A (40 years old) exhibited an erythematous reaction of the skin associated with the use of the night cream containing Chemoderm No. 995D. Subsequent patch-testing of the night cream with and without Chemoderm No. 995D and with Chemoderm No. 995D per se revealed only a questionable (+, −) response to the unperfumed night cream.

In Panel B a 21-year-old subject showed acneform lesions on the face during the usage period. Evaluation of the subject by patch test was negative. Re-usage of the same cosmetic was uneventful.

TABLE 4: Usage of Cosmetic Preparations by Panel Subjects

Cosmetic	Chemoderm Code No.	Total No. Times Used			
		Panel A	Panel B	Panel C	Panel D
Lipstick	995A	3,339			
	982		3,422		
	990			2,748	
	995B				2,454
Makeup Powder or liquid	995C	2,495			
	983		2,560		
	988			1,642	
	992				1,630
Hand Lotion	995E	4,025			
	984		3,682		
	987			2,079	
	989				2,174
Cleansing Cream	995B	1,548			
	981		1,476		
	986			1,114	
	993				1,256
Night Cream	995D	1,036			
	985		1,086		
	994			1,021	
	991				969

Final or challenge closed patch tests with the identical Chemoderms used in the cosmetics for each panel were performed on the subjects of that panel, 10 to 14 days following the period of use. Results of the patch test revealed no evidence of skin irritation or sensitization.

Discussion and Summary

In the civilized world today almost every human has his skin exposed many times a day to perfumes. Aside from the obvious exposures from cosmetics and toiletries, perfumes are found in soap powders, detergents, household cleaners, air fresheners, and myriads of other everyday items.

As new perfumes are made and offered for use, whether in the fine artistry of real perfume or the commercial items of daily use, such perfumes should be biologically evaluated before being allowed to come into contact with the human skin. We have presented such an evaluation routine consisting of rabbit-eye irritation tests, guinea-pig skin sensitization tests, tissue-culture studies, human-skin photosensitization, repeated insult patch-testing, and finally a usage test incorporating the perfumes into cosmetics of the type in which they could ultimately be used.

These techniques were applied to a new series of perfumes supplied by the coöperating perfumer,* and were trademarked as Chemoderms. Such perfumes have been critically standardized chemically by the perfumer so that they are definite mixtures of such constant physical standards that they are exactly reproducible. This is an advantage, since some perfumes made chiefly from natural sources may vary in physical and chemical properties from year to year.

For this study the perfumer has supplied 19 new fragrances in the Chemoderm series. These are in addition to the first 10 perfumes of this series which we previously evaluated and reported.[1] Thus, the Chemoderms offer a wide range of perfume notes, from flowery, fruity odors to the woody and heavy animal scents.

In the eye irritation test of rabbits the Chemoderm perfumes, as 1 per cent solutions in diethylphthalate, were compared with the solvent diethylphthalate. There was mild conjunctival irritation by the solvent, and the perfume in this solvent produced only this same degree of irritation. The erythema was transitory and there was no damage to the cornea or iris.

The guinea-pig sensitization evaluation by a modified Landsteiner technique[3] did not produce any evidence of skin-sensitizing potential by the Chemoderms in this animal. A mild degree of skin sensitization was produced in the positive control group of animals with 1-chloro-2,4-dinitrobenzene.

Because of the rather extensive amount of work required in tissue-culture assaying we limited this evaluation to 5 of the Chemoderm perfumes. They were tested on human conjunctival cells and chick heart fibroblasts with ethyl alcohol as a solvent and with suitable controls. From this work it was learned that the Chemoderms tested were no more toxic than peppermint oil, a substance widely used in perfumes and flavoring agents. Furthermore, the Chemoderms could be tolerated at a considerably higher concentration than could mercuric chloride. From a comparison of these studies with the other studies herein reported we believe that the tissue-culture assay is consistent with our toxicity and primary irritancy studies in such correlation as was reported by Livingood and Hu[4] covering much more extensive tissue culture work.

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* Firmenich, Inc., New York, N. Y.

Since photosensitization is widely known and is associated with many perfumes[8] we thought that new perfumes should be evaluated for possible photosensitization. In this test we applied the pure Chemoderm perfumes and a natural oil of bergamot as control to human subjects and exposed them to sunlight. We then repeated the experiment in 3 weeks to determine possible photosensitization even by the experimental exposure. In all cases there was no erythema nor pigmentation from the Chemoderms, whereas the oil of bergamot control produced pigmentation in each exposure. Hence, we have shown that the Chemoderms are not photosensitizers.

The repeated insult patch test[6] is a rather critical test which should reveal a possible skin-sensitizing agent as well as a primary skin irritant. Yet in these 10 applications of 24 hours each followed by a challenge patch there was no evidence of skin irritation, sensitization, or fatigue.

A usage test which employs the type of product into which the testing substance is to be applied to the skin is indeed the final "proof of the pudding." For such a test we put the Chemoderms into lipstick, face powder or liquid makeup, cleansing cold cream, night cream, and hand lotion. These preparations were used for 3 weeks. Then a 14-day rest interval was allowed, following which the subjects were given a final patch test. There were a few subjective complaints of questionable, transitory reactions. However, in repeated applications on the questionable reactors and in all final patch tests the results were negative.

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Appendectomy during Pregnancy

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APPENDICITIS IN PREGNANCY is a serious complication, especially when there is a delay in diagnosis and treatment. Prompt and careful surgical intervention is mandatory to protect the mother and spare the unborn.

There has been no mention regarding the importance of positioning the gravid woman for an appendectomy in any standard textbook. To detail an operative position for an appendectomy during pregnancy based on 14 cases treated successfully at Columbia Hospital for Women is the purpose of this article.

Seriousness of the disease in a pregnant woman has been stressed by many authors. The changes in position and axis of the normal appendix in pregnancy have been well documented by a radiographic study of Baer et al[1] and emphasized repeatedly in the literature.[2-5] On the other hand, it may be located in the normal position by periappendicular adhesions, low attachment of the cecum, or fixed retrocecal appendix.[4, 6, 7] By the end of 6 months the appendix usually becomes an abdominal organ[2] and the diagnosis becomes more difficult as pregnancy progresses near term,[6] since the abdominal wall is thin, rigidity is not great, and maximum tenderness tends to be higher in proportion to the duration of gestation.[5]

The difficulty not only lies in making diagnosis but in performing an appendectomy in pregnancy, particularly during the third trimester of pregnancy, as the enlarging uterus constantly tends to obscure the field of operation because of its ballotable nature. The uterus is a pelvic organ, and therefore there is no firm attachment in the abdomen; with increasing duration, it becomes boggy and soft, so that continuous retraction is impossible and improper. Even the usual technique of packing with gauze tapes does not provide the proper exposure for operation and only increases traumatic irritation of the gravid uterus, which in turn will raise the rate of abortion and premature labor postoperatively.

Position of Patient for Appendectomy during Pregnancy

The area of maximum tenderness is determined and premarked. The patient is placed in semi-left-lateral or modified kidney position as in figure 1 by supporting the right half of the body from the operating table with foam rubber pillows or soft sand bags. The patient is then secured in this position with strips of wide adhesive tape or by straps. General anesthesia is then induced and the operative site is prepared for surgery. With the patient in this position the enlarged uterus will fall into the lower left abdomen by gravity as

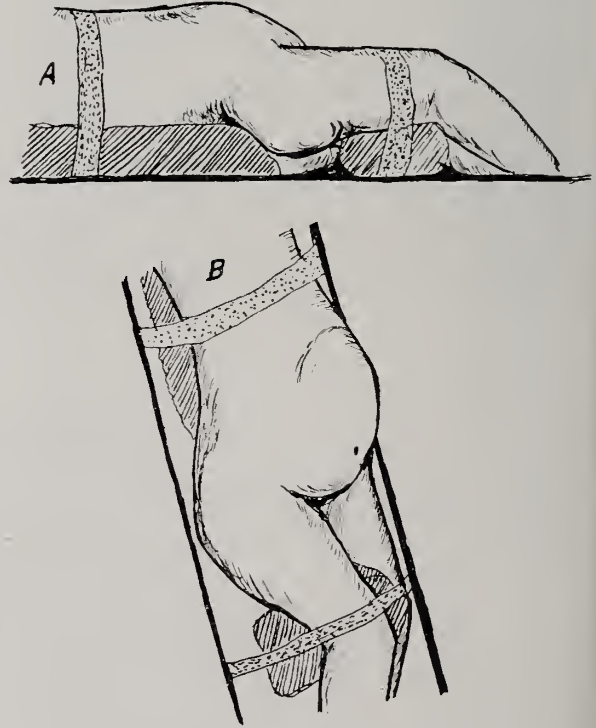

FIG. 1. Position of patient for appendectomy during pregnancy. Pillows are inserted below right half of body and between legs and position secured with 2 straps. A. View from right lateral side. B. View from above.

soon as the abdomen is opened, thus providing maximum exposure for the appendectomy with the least possible traumatic stimulus to the gravid uterus and elimination of constant retraction. Positioning the patient in this manner is not necessary until the second trimester of pregnancy, since the pregnant corpus usually does not dislodge from the pelvis and displace the normal position of the appendix until at or after the second trimester. Muscle-splitting incision following McBurney's incision or transverse incision of the skin is recommended since there is less chance of evisceration or wound disruption even when the patient goes into premature labor immediately following appendectomy. Usually less trouble is encountered when the incision is made directly over the area of maximum tenderness because the appendix lies just beneath in most cases, and therefore it is advantageous to premark the area of maximum tenderness before the patient goes into the anesthetic state.

Results

There were 14 patients in whom appendectomy was performed during pregnancy at Columbia Hospital for Women in a period of 19 years from January, 1943 through December, 1961. In 4 surgery was done in the first trimester of pregnancy, 7 in the second trimester, and 3 in the third trimester. In 2 patients among the second trimester group mild irregular contractions followed immediately after the procedure, which subsided with administration of parenteral progestational agents. One patient in the second trimester group delivered prematurely after 48 hours, and the infant died after a few hours. One of the third trimester group who was at term at the time of surgery delivered vaginally a healthy, normal infant 3 days later without any postpartum complications.

Of the 12 remaining patients none aborted or delivered prematurely, and all had the usual uncomplicated convalescence. These results were contributed to by the operative position for an appendectomy as described, as well as by prompt diagnosis and treatment. All patients were treated surgically within 12 hours from the time of admission. In 12 patients the diagnosis was confirmed pathologically, and 2 patients were found to have normal appendices despite symptoms and signs of acute appendicitis. The main subjective symptoms were those of the nonpregnant state, but 1 patient presented moderate irregular contractions as in premature labor without dilatation of cervix.

Discussion

The incidence of appendicitis complicating pregnancy has been reported variously from 0.03 to 0.1 per cent. At the Columbia Hospital the incidence has been lower than that reported in the literature. There were no maternal deaths or any postoperative complications and no fetal loss except in the case of the 1 patient who delivered prematurely in her second trimester following appendectomy.

Maternal mortality has been said to increase in cases in which appendicitis occurs in the later months of pregnancy and intrapartum[6, 8]; however, careful evaluation and prompt surgical measures will prevent serious complications such as rupture of the inflamed appendix. By positioning the patient in the modified kidney position undesirable trauma to the gravid uterus can be avoided and the incidence of abortion and premature delivery reduced postoperatively; furthermore, the position provides adequate exposure for the appendectomy even at term.

Passos[9] claims that tilting the uterus should be avoided during the procedure, but this is unavoidable unless there is adequate positioning of the patient for surgery, which will shorten the time of operation and lessen the postoperative complications. Cases of perforated appendicitis with complicating peritonitis in the later months of pregnancy have been reported,[7, 10, 11] and methods of treatment have been described variously, such as immediate cesarean section followed by appendectomy,[11, 12] termination of pregnancy by manual dilation of the cervix and the use of forceps followed by appendectomy,[13] appendectomy and then vaginal delivery,[14, 15] and total or subtotal hysterectomy preceded by cesarean section and appendectomy. In cases of simple acute appendicitis at or near term and in the third trimester the cesarean section prior to appendectomy[8,9,16] should not be applied as a routine method of treatment. The conservative approach and management of pregnancy following appendectomy result in a better outcome.

Differential diagnosis from infection of the kidney[17] should facilitate the diagnosis in some doubtful cases, although, when there are the usual symptoms of appendicitis, urinary findings do not mask the diagnosis of acute appendicitis. It is well known that patients in the predominately younger ages between 20 and 30 were mostly affected[18]; equal attention should be paid to any age group whenever a diagnosis of appendicitis complicating pregnancy is suspected.

(Continued on page 122)

Evaluation of Chloraderm in the Topical Therapy of "Athlete's Foot"

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ENCOURAGED BY THE EXCELLENT RESULTS obtained in a previous study of Chloraderm® ointment and liquid in the treatment of a small number of patients with "athlete's foot" it was decided to attempt a larger and more detailed evaluation of this preparation in the therapy of this disease. In the original evaluation[1] 8 patients with clinical tinea pedis were treated with Chloraderm. All showed excellent to very good clinical response.

Dermatophytosis of the feet, now popularly called "athlete's foot," is the most common fungus disease. It has been estimated that from 50 to 90 per cent of the entire population of the United States is affected at some time in their lives.

Hulsey and Jordan[2] reported a clinical incidence of tinea pedis in 67 per cent of University students. Of 390 patients in the Dermatology Clinic at the health service of the University of Pennsylvania 145 or 37 per cent had a mycotic infection of the feet. Legge, Bonar and Templeton[3] found 53.3 per cent of men and 15.3 per cent of women among 3,100 freshmen students infected. Muskatblit,[4] in his examination of 112 medical students and 100 patients in the dispensary, reported 98 per cent with clinical tinea pedis. Prehn[5] found 88 per cent of 1,500 men in the United States Navy to have clinical evidence of ringworm. Three hundred patients in a home for the aged were examined and, although few complained of any discomfort, 90 per cent were found infected.

The first detailed study of ringworm of the feet was made in 1892 by Djélaleddin-Moukhtar,[6] although it had been mentioned as early as 1870 by Tilbury Fox. In the United States Ormsby and Mitchell[7] were first to report a large series. In 1927 Weidman[8] published a very important article on tinea pedis.

The clinical picture of "athlete's foot" is the same whether the etiologic agent is fungal, bacterial or allergic. When the patient presents symptoms of maceration, slight scaling and occasionally vesiculation and fissuring between and under the toes, the assumption is made that the cause is fungal. Usually symptoms have been present for several years, and it is only because of the extension of the disease and the development of acute and painful lesions that the patient seeks medical relief.

In only half of the patients who present the clinical picture of "athlete's foot" has it been shown to be fungal in origin. When clinical tinea pedis fails to respond to standard treatment we tend to suspect a refractory strain of tinea, and when no fungus is cultured we suspect that inflammation has temporarily rendered the area sterile. Now we know that bacterial etiology may be primary and fungi completely absent.

In an extensive Army study a fungus was demonstrated by culture in only slightly more than half of the cases of "athlete's foot." Other investigators' findings are similar. Of the 50 patients on whom cultures were done in this study only 26 gave a positive culture for fungi, and 24 were completely negative to both KOH examination and culture.

The action of Chloraderm is derived from phenolic salts. Its formula includes sodium phenolate, phenol (less than 2 per cent), menthol, thymol, sodium tetraborate, glycerin and chlorophyll. Great success with this formulation has been shown by Novick and Sodhi[9] in the treatment of various pharyngeal infections in which it was proved to be effective as an anesthetic, fungicide and bactericide. Later Freeman, Gathings, and Gopinathan[1] showed the value of this preparation in the treatment of 50 patients with various skin diseases, and it was concluded that Chloraderm was a safe and effective dermatologic agent.

In vitro studies[10, 11, 12] with Chloraderm were done on 9 microörganisms with the A.O.A.C. (Association of Official Agricultural Chemists) phenol coefficient method. The results were all negative at 15 and 30 seconds, and 1, 5, 10 and 15 minutes with *Staphylococcus aureus*, *Streptococcus hemolyticus*, *Monilia albicans*, *Pseudo-*

monas aeruginosa, *Aerobacter aerogenes*, *Trichophyton menta*, *Microsporum canis*, *Microsporum audouini*, and *Trichophyton rubrum*.

Clinical Study

Fifty patients with "athlete's foot" from the outpatient Dermatologic Clinic of Freedmen's Hospital were treated with Chloraderm ointment or liquid.* Of these, 36 (72 per cent) were male and 14 (28 per cent) were female. Their ages ranged from 15 to 76 years. Thirty-seven patients were treated with the ointment and 13 with the liquid. The medicament was applied locally 2 or 3 times daily.

In the cases in which fungi were found the laboratory most frequently reported the presence of *Trichophyton rubrum*, *Trichophyton gypseum*, and *Trichophyton purpureum*. In all cases the clinical diagnosis was confirmed by culture studies.

The patients treated were selected without regard for the mildness or severity of the lesions, which ranged from slight scaling between 2 or more toes to severe pustular infection with cellulitis of the feet.

None of the patients developed any local or systemic sensitization to the topical application of either Chloraderm ointment or liquid. Evaluation ranged from excellent to poor based on the degree of relief from symptoms, particularly pruritus, and improvement or disappearance of the lesions. The results in 43 of the 50 cases (86 per cent) showed great improvement or complete healing of the lesions and subsidence of pruritus within 1 week. These were rated excellent to good. Clinical improvement was obtained irrespective of the etiology. Both the liquid and ointment gave comparable results.

Conclusion

From the clinical results obtained in this admittedly small series of cases, it can be stated that Chloraderm ointment and liquid are of definite value in the therapy of "athlete's foot" and that it has anesthetic as well as bactericidal and fungicidal properties.

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* The Chloraderm solution and ointment used in this study were supplied by The R. Schattner Company, Washington 1, D. C.

Gastric Ulcer—Changing Trends

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DURING THE PAST 15 YEARS there has been considerable progression in our understanding of the problem of gastric ulcer. Surgical and medical researchers have done much to clarify the physiology of gastric secretion and its relation to gastric ulcer. Data resulting from analysis of a larger number of medical, surgical and pathology records have contributed to a classification and typing of gastric ulcers, so that the finding of this lesion no longer need immediately raise the specter of malignancy. Increasing awareness of postgastrectomy problems and further experience in the medical therapy, closely supported by radiography, gastroscopy and exfoliative cytology, have tempered judgment as to the need and timing of the surgical approach to gastric ulcer.

Incidence of Gastric Ulcer

The generally accepted incidence of peptic ulcer (gastric and duodenal) in the population is approximately 10 per cent, based largely on clinical statistics. Gastric ulcer comprises 3 per cent of this total. It is known, however, that pathologists are finding an almost equal incidence of gastric and duodenal ulcers in autopsy material[1] due to the more difficult detection of acute gastric ulcers in the clinical state. Both the acute and chronic gastric ulcers are 3 and 5 times more frequent in males than in females. The peak incidence for both sexes is between the fifth and eighth decades.

Physiology of Gastric Ulcer

Preliminary to a discussion of etiology it is important to review gastric secretory patterns. Two major gland areas of the stomach are the source of gastric secretion. First is the pyloric gland area, which occupies approximately the distal 15 per cent of the distance between the pylorus and cardia and is responsible for the release of gastrin.[2] This hormone acts on the fundic glands which comprise the remaining balance of total secreting area. It causes these glands to secrete hydrochloric acid and pepsin.

Normal digestion is initiated by impulses mediated through the vagus nerve in response to thought, odor, sight, taste and mastication of food.[3] Vagal stimulation is capable of causing secretion of hydrochloric acid and pepsin by direct stimulation of the fundic gland area or indirectly through gastrin release. This comprises the so-called cephalic phase of digestion.

With the entrance of food, gastric peristalsis begins and the bolus is brought in contact with the pyloric gland area in the antrum where mechanical stimulation in the form of distention and certain chemical agents contained in food (meat extractives particularly) effect gastrin release, thus continuing the secretion of the fundic glands during the so-called gastric phase of digestion.

Some acidified food by this time has entered the duodenum, which is evidence that a gastrin-like hormone is released constituting the intestinal phase of gastric digestion and accounting for an appreciable secretion of gastric juice.[2]

Meanwhile as the acidity in the stomach increases to approach pH 1.5, autoregulatory mechanisms within the antrum effect a lessening of the acid secretion of the fundic glands. The high acidity probably acts upon the antral mucosa to prevent the further release of gastrin or causes the release of an inhibitory hormone which counteracts the effect of gastrin on the fundic glands.[2] In addition, the acid chyme now in the small intestine causes release of another inhibitory hormonal substance thought to be enterogastrone.

Etiology of Gastric Ulcer

In any discussion of the etiology it is important at the outset to understand that some ulcers of the stomach have much more in common with duodenal ulcers than with other gastric ulcers. Some of these are located at the pyloroduodenal junction or within the pyloric canal and are associated with hypersecretion of acid in tense, vagotonic individuals. In other related instances a duodenal ulcer first develops with later appearance of a gastric ulcer due to pyloric obstruction (severe spasm or stricture) and retention of large volumes of highly acid secretions. These 2 kinds make up 25 per cent of all gastric ulcers.[4]

When gastric ulcers other than these 2 varieties are studied as a group it is found that they occur in patients with hypotonic "J"-shaped stomachs with normal or low rates of acid secretion in whom tension factors are much less apparent. According to theory such stomachs empty slowly, allowing stasis of food and prolonged contact with the antral mucosa, causing excessive liberation of gastrin.[5] This theory has been supported experimentally by transplanting the antrum to the colon and with the result that hypersecretion of gastric juice causes ulceration of previously normal mucosa of the remaining stomach. It is also known in clinical practice that antral resection alone for duodenal ulcer is followed by a high incidence of marginal ulcer at the gastrojejunal stoma due to continued vagal stimulation of abundant remaining fundic glands. However, the same procedure for gastric ulcer is rarely followed by marginal ulceration because of removal of the source of gastrin and negligible vagal influence on pure gastric ulcers.

There is other experimental work which shows that the gastrin theory may be an oversimplification of the problem. Other proven influencing factors are (1) deficient gastric mucus secretion,[4] (2) locus minoris resistentiae of an embryologic nature at the junctional area of pyloric and fundic glands,[6] (3) submucosal arteriovenous shunts which open under the influence of adrenalin and emotions causing local gastric anoxia with attendant decreased mucus production and diminished tissue resistance,[7] (4) corticosteroids of endogenous origin,[8] and (5) deficient secretion of blood group substances—mucopolysaccharides with possible anti-ulcer or anticancer protective effect.[9]

Classification of Benign Gastric Ulcers

Based upon the foregoing etiologic considerations, an arbitrary classification of gastric ulcer has been suggested which serves as a useful guide to therapy and prognosis.[4, 6] Not included in this classification is the so-called stress ulcer,[10] which is relatively rare and develops as a result of severe trauma, burns, or serious central nervous system damage.

Type I (juxtapyloric ulcer):

Induced and behaves like a duodenal ulcer; high acidity due primarily to direct vagal stimulation.

Type II (retention ulcer):

Closely related to Type I with the additional factor of pyloric obstruction due to preceding duodenal or pyloric ulcer which prevents normal emptying and causes continuous gastrin-HCl release, and overwhelming mucus production.

Type III (true gastric ulcer):

Developing in stomachs with deficient mucus production and hypotonic stasis resulting in continuous gastrin-HCl release which causes ulceration in the border zones between fundic and pyloric glands, most frequently on the lesser curvature.[6]

Diagnosis of Malignancy in Gastric Ulcer

The controversial issue as to whether an originally benign gastric ulcer can undergo malignant changes is less important to the clinician than the differential problem of whether a given gastric ulcer is now benign or malignant. Fifty years ago it was believed that 70 per cent of gastric ulcers became malignant eventually.[11] Improved diagnostic techniques have reduced this to an overall approximate 10 to 20 per cent rate. In some clinics even these figures have been considered too high to be acceptable, and further efforts at differentiation have reduced the diagnostic error to an approximate 3 per cent.[12, 13]

Before proceeding to a discussion of the diagnostic approaches it is worthwhile to clarify the relationship between the location of a gastric ulcer and its malignant propensity. Prepyloric and greater curvature lesions in the past have been generally considered malignant. However, current surgical pathology studies[14] reveal that both benign and malignant lesions are found with approximately equal frequency in the prepyloric area. Lesions of the greater curvature comprise less than 5 per cent of all gastric ulcers. At one time it was stated that all greater curvature ulcers were malignant. Present figures reveal that no more than 50 per cent[15, 16] to as low as 12 per cent[17] are malignant. Thus, carefully compiled statistics prove that location is not a reliable indicator. The corollary is that the nature of each gastric ulcer must be determined individually.

A high rate of diagnostic accuracy depends on a complete study of the cases, utilizing radiography, gastroscopy, cellular cytology, and intelligently applied, rigidly controlled therapeutic medical trial. Traditionally, radiography is the first method of approach. Expertly done stomach

X-ray examinations will demonstrate a gastric ulcer in 90 per cent of the cases and allow determination of its malignant or benign nature with 55 per cent accuracy.[18] Gastroscopy is a very useful adjunct to radiography. Adequate visualization of the gastric lesion is accomplished in approximately 80 per cent of the cases, with accurate distinguishment of 70 per cent of the lesions seen.[18] Exfoliative cytology is a relatively new diagnostic field in which more investigative work has been done in the past 10 years.[19] The results obtained by examination of the aspirated gastric contents vary with the interest and experience of the observer. With good technique, results approximating 80 per cent accuracy are reported. In addition to simple aspiration, gastric abrasive balloons and gastric biopsy are used as alternate methods, but the results are not as uniformly good.

All of the foregoing techniques are complementary, nonexclusive, and additive toward placing the gastric ulcer in 1 of 3 provisional diagnostic categories, namely, (1) malignant or possibly malignant, (2) probably benign, complicated, and (3) probably benign, uncomplicated. This classification has been proposed and used by the gastrointestinal group at the Graduate Hospital, University of Pennsylvania.[13] It is designed to indicate which patients deserve the rigidly controlled therapeutic medical trial. Immediate operation is recommended for category 1 patients. Operation is also advised in category 2 (pyloric obstruction, confined perforation, massive hemorrhage). Category 3 patients are of prime concern. These patients are placed at complete bed rest and given hourly feedings of 4 to 5 ounces of whole milk from 7 a.m. to 10 p.m. with 2 teaspoonfuls of antacid midway between feedings. Small doses of liquid or parenteral barbiturates and subthreshold doses of anticholinergics are used if anxiety or spasm is apparent. At the end of 2 weeks and no longer than 3 weeks the X-ray examination is repeated. A reduction of 50 per cent in the size of the lesion is justification for modification of the diet and continuation of the trial therapy. The X-ray study is repeated at 2-week intervals until healing occurs. Failure to obtain this response is an indication for operation without delay.

Strict adherence to the rules by patient and physician enabled the group at Graduate Hospital to register an error in but 4 of 152 trial cases, or a 2.6 per cent failure rate. Six additional patients were found to have malignant ulcers on therapeutic trial and were sent to surgery. Thus, a total of 10 ulcers (6.6 per cent) from the group of 152 probably benign uncomplicated ulcers (category 3) later proved to be malignant.

Surgical Management of Gastric Ulcer

Concern in surgical circles regarding the low rate of 5-year survival in gastric carcinoma has spawned proposals for a policy of surgical treatment for all gastric ulcers.[14, 20] When applied indiscriminately 70 to 90 per cent of the resected stomachs contain benign lesions.[21] Although 20 to 25 per cent of gastric cancers may look like gastric ulcers, if all available diagnostic measures are employed, no more than 10 per cent (some would say 5 per cent) of preoperatively benign gastric ulcers are later determined to be malignant. Thus the gastric cancer survival rates revolve about this small group rather than all gastric ulcers.

On the other hand, although surgical mortality statistics in gastric surgery have improved remarkably to the 1 or 2 per cent rate under the best conditions, the postoperative morbidity rate of postgastrectomy symptoms is 40 to 50 per cent under these same conditions where a 70 per cent or more resection is carried out.[22] When the operation is done for possible malignancy the extent of resection is understandably likely to be greater than less. It is appropriate to mention that 20 per cent or more of preoperatively apparently malignant lesions prove benign at operation.[13]

Recognizing the need for balance between the vigorous approach to a potentially malignant lesion and the undesirability of gastrectomy for a benign condition, some surgeons agree with their medical colleagues in requiring a complete preoperative diagnostic survey of the lesion.[22] This quickly categorizes the apparently malignant ulcer and the complicated benign ulcer. The need for operation in both instances is unanimously conceded. In the former, if frozen section at operation confirms the preoperative impression, the only treatment is radical removal of the stomach and lymphatic drainage. However, if malignancy is not demonstrated, extensive gastrectomy with its attendant morbidity and mortality is not advised.

It is with the group of patients whose gastric lesion is not so readily categorized that surgeons and medical men currently hold different opinions. The current surgical trend is away from a medical therapeutic trial except to a very limited extent. Early surgery is advised.[22] Physicians generally favor the trial therapy. Some internists, notably the gastrointestinal group at the University of Chicago,[23] believe in medical management for 2 or 3 months if all diagnostic indicators point to benignity. This is based upon the observed length of time necessary for complete healing of chronic benign gastric ulcers.

Surgical Procedures in Gastric Ulcer

Gastric surgery is usually undertaken because of possible malignancy or for a complicated benign lesion. For the latter condition the procedure will be dictated by the varied operative findings and the individual surgeon's preference. In the former instance, if frozen section at operation indicates malignancy and the lesion is located in the distal one-third of the stomach (approximately 50 per cent are here), a 60 to 65 per cent distal gastric resection is advocated with removal of lymphatic drainage.[22] More radical procedures, i.e., total gastrectomy, for carcinoma in this location have not been shown to produce higher cure rates, and the attendant morbidity and mortality are very significant.[24] When lesions of the lower one-third are benign the subtotal gastric resection is done. This removes the antrum, which is the source of the hormone gastrin, which is considered causative of peptic gastric ulcers. The subtotal resection may be complimented by vagotomy, which is done routinely by some groups while others reserve this for the patients with associated duodenal ulcer and demonstrated hypersecretion of neural origin.

Lesions of the upper two-thirds of the stomach pose a significant problem because of their location. For these lesions a wide-wedge excision of the whole ulcer with meticulous 4-quadrant frozen tissue examination is recommended. If the lesion is malignant, extensive surgery including total gastrectomy offers the only hope. If the lesion is benign, the gastric defect can be closed and the procedure completed by antral excision or antral drainage and possibly vagotomy.[22]

Summary

Significant forward strides have been made regarding gastric ulcer. The factors involved in its production are now known. However, complete knowledge of the interaction and relative significance of these factors is lacking. Classification of benign gastric ulcers adds considerable rationale to treatment and prognosis. Diagnostic differentiation of benign and malignant types of gastric ulcer employs radiography, gastroscopy, exfoliative cytology, and the rigidly controlled medical therapeutic trial. Close coöperative consultation between the medical and surgical specialties is essential in order to make correct judgments as to the need, timing, and extent of the surgical procedures.

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PRESIDENT'S PAGE

HAVE PATIENCE

The title is not a witticism. Good physician-patient relationship transcends any matter of how the practitioner is remunerated for his services. Years from now, no matter what the outcome of the current disagreements over the method of financing medical care, the patient will respond to personal interest in his condition and will seek the physician with whom he can communicate freely and calmly.

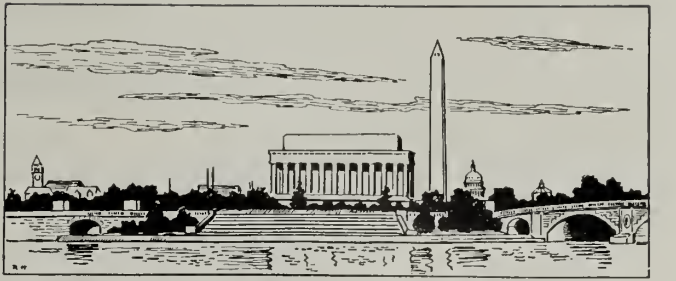
One of the principal concerns of the sick, and particularly the enfeebled, is that they will encounter impatience and lack of understanding among medical attendants, doctor or nurse. Contrariwise, nothing is more reassuring than a few softly spoken words or a few moments of quiet listening.

The inveterate lay reader of popular articles on medicine presents an often irritating problem with his half-informed suggestions and questions. This is aggravated if he is a know-it-all type. The physician, however, who, instead of becoming angry and resorting to sharp words, turns these often silly remarks to good use is in an infinitely improved position. It can, for instance, be pointed out to such patients that the unconfirmed research about which he has read is not ready for general use, and how many of these golden promises have come to naught in the past!

Finally, in these days of third-party payment for medical services, the physician must familiarize himself with the principles of the various plans and stand ready to explain them to his patients. Most queries concerning charges can be satisfactorily answered in moments or by a few lines, even though it be simply a matter of itemization. This last becomes of extreme importance where a workup includes laboratory and other special procedures.

Explain yourself and be patient—it will be rewarding.

RCorley



EDITORIALS

The Treatment of Duodenal Ulcer

One of the primary considerations in the treatment of duodenal ulcer is to follow the old recipe for making hare soup—"first catch the hare." It is obvious that the presence of an ulcer must be established before undertaking any treatment.

The typical symptoms of an ulcer are often present, but, on the other hand, the first indication of an ulcer may be announced by hemorrhage or perforation. The X-ray examination plays a conspicuous and important part in the diagnosis of a duodenal ulcer, as most roentgenologists will admit, and repeated examinations are frequently necessary. Even an ulcer, as the source of alarming hemorrhage, may not be disclosed by the roentgen ray. It, therefore, behooves the physician to use every available and appropriate means to establish the diagnosis. Many surgeons have been chagrined and embarrassed, and ditto the patient, for failure to disclose an ulcer upon exploratory operation.

The medical treatment of ulcer should be given priority in every case, unless an emergency, such as perforation, hemorrhage or pyloric stenosis, exists. Even in the latter condition, obstruction is often not organic and is relieved by medical measures.

The word "ulcer" in reference to the gastrointestinal system has been bandied about in almost a slangy way and become the butt of conversational whimsical remarks. A duodenal ulcer is a serious disease and justifies the top resources of our profession. It is a disease with a long history, of which the actual cause or causes are still somewhat clouded but has been recognized and treated in a variety of ways. For many years silver nitrate per orem was the standard or accepted method of treatment, with questionable success. Even at present I see a few individuals who have the grayish colored skin (argyria) as a souvenir of a former therapeutic practice.

The statement that 75 per cent of patients with duodenal ulcer respond satisfactorily to sound medical treatment is probably a reliable statement. So much of the successful treatment depends on the coöperation of the patient that recurrence can properly be ascribed to the failure of the patient to adhere to the habits and medication dictated by his physician. The case becomes surgical when failure to effect a cure and the symptoms persist, and also in the presence of organic stenosis, hemorrhages of a major character or repeated small hemorrhages, or perforation. In the earlier decades of this century gastroenterostomy was the choice of operation for duodenal ulcer. I have often witnessed 3 or more such operations daily at the Mayo Clinic upon my frequent visits there. There were too many cases of gastrojejunal ulcers that followed, which did not satisfy the high type of surgery at that institution, and from Germany, particularly, came rumors and reports that resection of the stomach had not only given excellent results but had reduced the number of gastrojejunal ulcers and other complications.

America was not long in accepting the new approach to the treatment of duodenal ulcer. Not only was the operation popular, but modifications were instituted, such as the amount of the stomach to be removed, the type of anastomoses and minor details, including the suture material, and the postoperative treatment.

A radical departure was introduced when vagotomy was substituted for gastric resection, but it did not displace resection in many large clinics. Some complications followed vagotomy, such as retention of food in the stomach, alteration of the peristaltic control in the intestines, and

Opinions expressed in contributions to the Editorial Section are those of the writers and do not necessarily reflect the views of the Medical Society of the District of Columbia

American Medical Association Exhibit—"Physi

The

Personal (family) Physician

and the

Plant Physician

ARE A TEAM

Together they maintain the health of the worker, at home and on the job. Their interest in prevention and control of disease and injury results in better morale, less sick absence and more effective work on the job.

TYPES OF TEAMWORK

Personal Physician	Plant Physician
Rehabilitation	
Uses medical skills to cure illness and repair injury, and follows convalescence until return to full recovery on the job.	Works with management in judicious job placement and in making available all possible opportunities for gradual on-the-job rehabilitation.
Absenteeism	
By accurate diagnosis and prompt treatment helps reduce lost time, especially that due to minor symptoms, chronic complaints or emotional disturbances.	Reduces lost time by eliminating hazards, promoting safety and health education, and by isolating or preventing infection.
Job Placement and Transfer	
Consults with the plant physician about work hazards, and about conditions which may not be suitable for a particular employee.	Studies job requirements and plant environment to help place worker on proper job or show need for job transfer.
Illness and Injury Reports	
Notifies plant physician about sick or injured employees, and of their subsequent rehabilitation. Coöperates in supplying requests for reports.	Asks only for those reports which are absolutely necessary, and in turn supplies the personal physician with information he requires.
Professional Relations	
Utilizes the coöperation of the plant physician - nurse - hygienist - safety engineer team, whenever an employee's health can benefit.	Avoids using his plant position as a means of building a private practice—promptly refers sick or injured employees.
Medical Society Relations	
Works with his medical society to promote good occupational health programs.	Works with his medical society in community health as well as occupational health.

failure to divide all fibers of the pneumogastric branches supplying the stomach. Vagotomy was compromised by adding gastro-enterostomy to the act, which seemed to eliminate some of the complications of vagotomy. There is a lack of unanimity respecting the superiority of the various types of operations, but resection of half or more of the stomach and the ulcer seems to be the operation of choice among most surgeons.

Dr. Owen Wangensteen and his associates[1] have introduced a novel method of treating duodenal ulcers in a paper entitled "Technique of Gastric Freezing in the Treatment of Duodenal Ulcer." He states, "The stomachs of 80 patients with duodenal ulcer have been frozen, with immediate relief of symptoms, early disappearance of ulcer craters, and depressed gastric secretory responses." The technique of gastric freezing is described and certain precautionary measures are recommended.

It would appear from the perusal of the Wangensteen contribution that the application of the freezing treatment of ulcers is not a simple undertaking. It requires a special apparatus, trained personnel, and familiarity with the method. It would be wise for one contemplating this method of treatment to use an animal to familiarize himself with all details and the possible errors and risk involved. Although this brilliant conception

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[1] Peter, E. T., and others: J.A.M.A., 1962, **181**, 760.

cian Relationships in Occupational Medicine"

GENERAL PRINCIPLES

Personal physicians and plant physicians should consult with each other when a patient's health problems are related to employment.

Both should honor requests from the other for diagnostic records when required for a mutual patient.

Both should respect the confidential character of certain types of medical information when "Third Parties" are involved, unless required to do otherwise by law, or if the patient's consent is obtained.

Both should have the same ethical doctor-patient relationship with an employee as with any private patient, and without partisanship toward labor or management.

Both should utilize the voluntary health agencies and other resources available in the community, whenever a worker's health may benefit.

THE ULTIMATE GOAL OF EACH SHOULD ALWAYS BE THE BEST AVAILABLE CARE FOR THE PATIENT

EITHER A PERSONAL OR OCCUPATIONAL PHYSICIAN MAY BE ASKED TO SUPERVISE PROGRAMS IN SMALL INDUSTRIAL PLANTS

75 per cent of all employees in U. S. industry work in small plants.

Most of these as yet have no occupational health programs.

FOR INSTRUCTION IN SETTING UP SUCH PROGRAMS, SEE AMA's "GUIDE TO THE ORGANIZATION AND OPERATION OF SMALL PLANT OCCUPATIONAL HEALTH PROGRAMS"

Many other guides in the field of occupational health are also available from the Department of Occupational Health, AMA, 535 North Dearborn Street, Chicago 10, Illinois.

of the treatment of duodenal ulcer deserves every consideration, only trial and time will establish its place in the category of curative agents. Already there are unconfirmed rumors that ulcer of the stomach is a possible complication. Wangensteen concludes his paper with this statement, "The simplicity of the method and its effectiveness in the management of duodenal ulcer suggests it to be worthy of extended and careful trial."

C. S. W.

Lobbying Expenses

Many times one hears or reads about the lobbying activities of the AMA, usually with reference to medicine as a big spender. Yet according to a report prepared by the AMA Legislative Department, the AMA spent only \$163,404.61 in 1961 for lobbying activities; contrast this with \$1,010,365.51 spent by organized labor during the same year.

A Major Medical Insurance Experiment

A variety of local attitudes and opinions are heard in regard to Major Medical coverage and the use of the term of "usual and customary" fees. Some like the term, some don't; some agree with the idea, some don't. In view of these differences the approach taken by a company and union in California should be of interest and, perhaps, concern.

North American Aviation, Inc. and the United Auto Workers have agreed to a Major Medical coverage contract to be underwritten by the Metropolitan Life Insurance Company with a surgical schedule based on a $5.50 factor and $50 deductible on nonsurgical illnesses. North American will establish a panel of physicians who will agree to this arrangement through solicitation of the local medical profession. However, at the insistence of the Medical Society, the brochure given each employee would make it clear that he could go to his own physician and use the policy as an indemnity.

This isn't the first instance of this type but it does represent a company, an insurer, and a union of such size as to warrant careful follow-up. The *Los Angeles County Medical Society Bulletin* has this to say about the program:

"North American and the insuring agent, Metropolitan Life, are aware of the drawbacks, but at least they have made an attempt to explain the circumstances and conditions before the policy becomes effective and we suddenly discover another company trying to establish a panel. These gentlemen were not trying to sell the policy of the panel but were earnestly trying to give the local medical profession some insight into their side of the problem. They have offered to send representatives to District meetings to carry this explanation directly to the membership.

"This recognition of medicine's interests and attitudes by a major segment of local industry is a milestone in our relationships with those concerned with the financing of health insurance. It is obviously in our own best interests to make this policy work as an indemnity policy, thus relieving difficulties with semantics, but our future influence and opportunity to correct these problems will be in direct proportion to our coöperation with industrial and union management in helping them to solve their problems."

A World of Women

Early in the history of this country women were imported by the shipload to try to balance the male-female population. Later during the "opening of the West" women were again at a premium and their entrance into western towns was cause for celebration by all.

Now one reads how they control much of the Nation's wealth (65 per cent of savings accounts, 65 per cent of Nation's private wealth, beneficiaries of 80 per cent of all life insurance), live longer (73 years expectancy compared to 66.5 for men), and are more numerous than men. In this latter connection, a recent report of the Metropolitan Life Insurance Company provides more data on the fairer sex.

According to this report, the number of widows in the United States is growing at the rate of 100,000 a year. In March 1961 there were approximately 8¼ million widows in the country and "it is expected that their total will continue to rise rapidly." The widows aren't all old ladies either, because of the 550,000 women widowed in 1961, about 90,000 were under age 45 and over half under age 60.

What's wrong with the men in our country? There are more of us at birth; our medical-hospital-surgical insurance rates are much less during working years; yet we evidently leave this world earlier than our wives. Perhaps the Medical Society's Committee on "Aging" should concentrate on the male so he can be around long enough to enjoy those years of life he works and saves for.

"How Dull It Is to Pause . . ."

Address to the 1962 Graduating Class of The George Washington University School of Medicine

HAROLD STEVENS, Ph.D., M.D.

Professor of Neurology, George Washington University School of Medicine

"Yet all experience is an arch wherethrough
Gleams that untraveled world whose margin fades
For ever and for ever when I move.
How dull it is to pause, to make an end,
To rust unburnished, not to shine in use!
As though to breathe were life!"
Tennyson: Ulysses

Guests of the graduating class, fellow faculty members, and fellow students: I want to thank you for selecting me for this signal privilege of addressing you on this final and meaningful occasion.

The ritual of this ceremony is one of the most significant in your lives and in ours, the faculty's. It commemorates the past and salutes the present. It is the end and it is the beginning. It is a time for rejoicing and a time for sadness. It is a time for reflection and a time for anticipation. For us, the faculty, it is especially a time for introspection, generated by concern with your future and with the effectiveness of the preparation we have provided for you.

Preparation for what? There can be only one valid answer—preparation for change. We hope you are equipped to deal with change and with uncertainty, for that is what surely lies ahead. We hope after these 4 years that you are prepared not with a Merck manual but rather with skills, attitudes, and intellectual resources that you will need for effective adaptation to unpredictable developments. The purpose of the medical school is to provide the basic equipment, the launching pad and the propulsive force, but the trajectory must remain uncertain. The course will be deflected by socioeconomic and scientific forces that can be only partly discerned or predicted. We aim at a moving target and hope that you will be prepared to alter and control your course with changes in the direction and dimensions of the elusive objective. The objective is easy to define but difficult to achieve. The goal is that of the "good physician" in a changing world. The goal is ever the same; the method and milieu change and must change at an exponential rate.

Our main objective is to give you effective tools to accommodate to the only thing that is certain—change. The training in your past 4 years in medical school can be likened to a bridge which we have built together so that you can cross a high and wide chasm to permit, but not necessarily assure, your continued forward progress.

This ceremony marks the completion and the crossing of the bridge, but you cannot pause to view the vastness of the beckoning horizon nor contemplate the scene below or behind, because the bridge will inexorably dissolve, melt into the limbo that has engulfed the archaic dicta and the so-called truths of yesterday. By continuing self-education you must build and rebuild new bridges, incorporating parts of the old, to span new chasms to insure your advancement. This is merely the first bridge but probably the most important one. To acknowledge its inherent evanescence is not to minimize its worth. In fact, the future will demonstrate that it is built with stronger timbers than you now appreciate, timbers which will shore up your self-confidence and invoke surprise and even gratitude, which I hope you will not be reluctant to express. There is an old English proverb, "Let every man praise the bridge that carries him over."

Struggle to Keep Informed

To assure safe passage through the wilderness it has been necessary to compact high-potency factual data into your tired brains. And now, ironically, I must tell you that much of this learning will be forgotten and much will be archaic in a few years. By crisis and by lysis it will be degraded into useless half-truths or worse. According to Henrik Ibsen, "The value of a truth lasts about 15 years and then it rots into error." I would estimate that your present store of knowledge has a half-life of about 5 years.

This disconcerting observation has been documented. A study soon to be published has disclosed that when 86 sophomore, junior, and senior medical students were given the same examination they passed as freshmen, none passed the second examination in gross anatomy, none in biochemistry. Further, there was no difference between the performance of the students in the upper and in the lower quarter. Worse yet, when 14 members of the faculty were similarly tested, achievement was at the same poor level. One internist received 30 in biochemistry, and the same score was obtained by an associate professor of surgery in anatomy. Whitehead was quite accurate when he stated that information, like fish, does not keep too long.[1, 2]

Thus, the hard-won knowledge you have acquired is transitory, and even the skills and knowledge you retain are marked for gradual obsolescence, or even for sudden death. New instruments, techniques, drugs, and new diseases appear overnight at an accelerating rate. The country's ethical laboratories turn out about 400 new drugs a year, or better than one every day, and according to a United States Senate report, 4,000 medical journals throughout the world publish over a quarter million articles in over 30,000 issues yearly. Man has eaten gluttonously from the tree of knowledge and now suffers chronic indigestion.

One of the consequences of this high-speed scientific development is the overemphasis and glamorization of the efficacy of drugs, and some of the consequences of this inordinate veneration of and reliance on drugs is insistent demand for their use by patients. Abuse of drug therapy is compounded by the overreadiness of the physician to propitiate the patient and simultaneously to make a prompt and mutually satisfying disposition of the case. A significant but little publicized study of general practitioners has disclosed that nearly half the physicians observed at work with patients did not take an adequate history, that an equal number did not perform an appropriate physical examination, and most significantly that there was an inverse relationship between the amount of data accumulated about the patient and number of drugs used on the patient.[3]

This common concatenation commits the physician to ever briefer and superficial contact with his patients. Reliance is placed on the drug or on the magical surgical treatment. Communication between the doctor and the patient becomes tangential and limited, and as a result the doctor becomes a mere vehicle, nexus, or intermediary. Aesculapius has been outdistanced by fleet-footed Mercury, the messenger, whose figure holds the caduceus, the recognized symbol of medicine. What is generally unknown, fortunately, is that the original Roman statues of Mercury depict him with a caduceus in one hand but with a purse in the other. Why Mercury, the worshipped deity of Roman merchants—not physicians—holds the caduceus can only be speculated on by an overmedicated laity and the Kefauver Committee.

Blind faith in drugs and in science is replacing the faith and confidence formerly vested in the physician. The current dramatization of science and of miraculous cures arrogantly implies that in our era complete control over disease has been achieved. But the growing list of iatrogenic diseases, the epidemics of staphylococcus infections, and particularly the frequent devastating complications of drugs, especially on the fetus, should be a lesson in humility and perhaps also in retributive justice.

The history of medicine teaches us that the lavish praise of drugs and the illusion that science has conquered disease is not new. Boerhaave, Benjamin Rush, and Charcot each proclaimed the medical millennium. In 1900 Berthelot, the famous chemist, declared that victory over disease was all but won and a few years later, in fact 60 years ago almost to this day, the wise and articulate William Osler delivered a panegyric on medical progress which even in our modern mood of self-satisfaction we would consider overly optimistic, premature, and presumptuous. He said, "Never has the outlook for the profession been brighter. Everywhere the physician is better trained and better equipped than he was 25 years ago. Disease is understood more thoroughly, studied more carefully, and treated more skillfully. The average sum of human suffering has been reduced in a way to make the angels rejoice. Diseases familiar to our fathers and grandfathers have disappeared. The death rate from others is falling to the vanishing point, and public health measures have lessened the sorrows and brightened the lives of millions."[4] And yet when I refer to Osler's text, Practice of Medicine,[5] I find the therapies recommended for meningitis, pneumonia, typhoid fever and tuberculosis as naïve as they are ineffective.

Scientific Rationalism versus Humaneness

Modern medical and surgical therapy, although not the final word in perfection, is indeed awesome, and the patient understandably looks to these weapons for help, solace, and reassurance, relying on the magic of the medicine and less on the warmth and humaneness that the less well equipped physicians of the past utilized. Thus, the physician has become a victim of depersonalization in the very era that the psychosomatic philosophy has achieved ascendancy. To avoid this undesirable occupational image of the aloof, narrow, and dehumanized messenger of magic and purveyor of potent pills the young specialist (and 85 per cent of you will become specialists) must break out of the confines of his limited field. He must dedicate his future to revising the definition of a specialist from one who knows more and more about less and less to the only acceptable definition, that is, one who knows more and more about more and more. And among the subjects he has to know more about, in addition to himself, are the patient, the community, and the humanities.[6, 7] It is more important to know the patient than to know the disease, and to know the patient one must know the milieu in which he lives. Sooner or later you must build a bridge to the humanities, explore this area, and keep both feet on the ground there, or like Antaeus of Greek mythology, who lost his strength when he lost contact with the earth, your powers to help your patient will fail.

The practice of medicine from this description sounds exacting and exhausting. It is. Whenever you deal with people, particularly sick people, energy is transferred from you to them, and the longer and more intimate the contact, the greater the demands made on your spiritual resources. I would postulate the first law of medical psychodynamics: The amount of energy required to sustain a balanced doctor-patient relationship in equilibrium is directly proportional to the time spent with the patient and inversely proportional to the square root of the distance between them.

As specialization increases and as the more potent medical and surgical remedies are placed in the physician's hands his power over life and death becomes more positive and his need for the sick and dependent more urgent and more frequently required. And yet at the same time he is becoming dehumanized. I believe that this complex shifting and contradictory role of a physician is one explanation for the public's ambivalence toward him. Add to that the current complex and often bitter socioeconomic controversies, and the definition of the situation becomes more obscure and unpredictable. It is understandable, therefore, that the young physician's image of himself is often blurred, that his future is unclear, and that preparation for change and uncertainty is a meaningful and necessary objective.

The young doctor, if adequately prepared by his school for uncertainty, and if dedicated to a lifelong program of continuing self-education, can accommodate to these two challenges of (1) the threat of obsolescence of knowledge he acquired in medical school and (2) the threat of the dehumanizing process. But his troubles are not over.

Hazards of Monotony

A third threat awaits, which has never been mentioned to you and which has not to my knowledge been dealt with casually or formally in any of your courses nor in any article on medical education or practice. I refer to the universal occupational hazard of monotony. My own informal studies of this phenomenon have little hope of NIH support, but the subject deserves more attention from physicians since they and also their patients are victims of it. It is ubiquitous and invades the lives of increasing numbers of people in our highly industrialized society. Automation has eliminated monotony in some jobs but created it in others.

Monotony is the undesirable effect of repetitive work. It causes boredom which is often insidious and hard to recognize. It often masquerades in forms of passive entertainment, in indiscriminate staring at TV—that idiot's lantern, in the dreary hours of aimless driving, in the compulsive pursuit of senseless diversions, and in the fatuous imperturbability of the empty and the jaded. Other manifestations range from various forms of escapism, such as addiction to drugs, or alcohol, or suicide.

As Dubos[8] further points out, the highest rate of drug addiction, suicide, and death from violence occurs in countries such as ours which enjoy material wealth and have the most effective social legislation and the greatest political stability. The United States, Switzerland, Denmark and Australia lead the list. With regard both to suicide and homicide (as well, of course, as to road accidents) the lowest rates occur in countries where nature and economic circumstances seem to make life harder and more uncertain. Among these countries are Catholic Eire and Spain, Protestant Ulster in Northern Ireland, and the Jewish state of Israel.

We think of boredom and monotony usually as an affliction of unskilled or semiskilled blue collar workers and not of white collar or professional workers. But it is an inescapable hazard in the practice of any field, including medicine, which is not all sustained excitement punctuated by frequent Olympian triumphs over disease and death. Rather, the practice of medicine is too often monotonous, tedious, and boring. Repetitive work is necessarily the very core of the physician's daily habit, and it is what many of you are destined to experience for the rest of your professional lives.

Paradoxically, it takes several years to master a technique, for example, the all-important physical examination and history, and by that time the process threatens to become a boring mechanical reënactment of a stereotyped and often onerous task. And with increasingly narrow specialization the variety of problems is decreasing. For example, otolaryngology is now rarely combined with ophthalmology as was common 20 years ago. In fact, ophthalmology is now fragmented into the orthoptic specialties, neuro-ophthalmology, pediatric ophthalmology, etc. The neuropsychiatrist is becoming extinct. In fact, many neurologists, and psychiatrists too, for different reasons now consider the term neuropsychiatry an abhorrent hyphenated obscenity. The heat generated by strong feelings on both sides makes this specialty particularly fissionable. But so are general surgery, pediatrics, and internal medicine. Clinicians have found that only by fractionating these expanding universes of knowledge can they hope to master the already vast area of a specialty. Divide and conquer is the road to competence and comfort. It is also the road to conflict—conflict between the desire conscientiously to analyze and manage an increasingly stereotyped universe of clinical problems and the boredom that necessarily stems from compulsively repeating the ritual of the thorough examination.

But this is the way you and all of us have been schooled. It is the only way. To focus your attention only on that organ system of which the patient complains reflects incompetence, irresponsibility, or both. The complete examination in general medicine or in a specialty must not be abrogated or abbreviated. Studies have shown that most missed diagnoses result not from failure to analyze the data of the history and physical examination but from failure to elicit the data in the first place. There is a sound maxim in medicine that more mistakes are made because the physician did not look than because he did not know. The habit of thorough and methodical examination is the only insurance against inevitable disaster. This rule can never be relaxed even though the routine search for the supraclavicular node, tophi in the ears, the bruit over the eyes, the diminished femoral pulse, etc. is tedious and dull and, what is more, yields a low percentage of positive findings. But resign yourself early to monotony, recognize it for what it is, that is, the price of protection—protection against the trap that lies in wait for the hurried, the careless, the indolent, and the undisciplined.

No one escapes monotony. Artists and musicians contend with it daily. The engineer, the lawyer, the accountant, all must deal with monotony, and at the same time all must remain alert and constantly resist the understandable urge to circumvent, to evade, or to truncate the tedium.

Some occupations are extremely monotonous, and some medical specialties are more monotonous than others. Studies have shown that job satisfaction is extremely high in the field of medicine; that is, almost 100 per cent of doctors would elect the same profession again but not all would elect the same specialty. Only 63 per cent of the pediatricians would elect this specialty if given the choice. Much of the discontent stems from the monotony inherent in dealing with stereotyped problems. From my experience in a well-baby clinic and from my frequent interrogation of pediatricians, I find this position valid. The same goes for other specialties. Ophthalmologists spend much of the time with repetitive refractions. A surgeon has his endless suturing, and monotony dulls the edge of surgery. I could continue and enumerate every specialty and systematically alienate all my fellow faculty members.

What about psychiatry? Here certainly is an exception. Here, one encounters the widest variation of the widest themes in this field. Nothing is as full of surprise, color, variability as the vagaries of human behavior with which psychiatrists deal. But most psychiatrists occupy almost all their time in psychotherapy, and this is the most demanding and, according to many sophisticated psychiatrists, the most difficult and monotonous of all specialties. This aspect of psychotherapy was vividly portrayed in a *New Yorker* cartoon. A middle-aged woman is recumbent on a couch in back of which is seated the psychotherapist. He is wearing an expression of utter indifference born of sheer boredom as his patient says, "and then I add the flour and shortening and a tiny pinch of salt. Of course, some people believe in baking it for at least 1 hour in a very hot oven."

And now what about neurology—what Osler called the queen of specialties? I cannot claim any immunity from monotony for neurology. In fact, the omnipresent need for painstaking repetition of a careful, complete history and physical examination may be even more compelling in this specialty.

What about medical research with its alleged thrill of discovery, of breakthroughs, of fighting on the frontier of science? I can speak from several years of experience as a research chemist. The repetition and monotony inherent in careful research can be oppressive.

Even though some careers in medicine have more built-in boredom than others, none would see salvation, save through grace and certain techniques. One technique is through the use of fantasy. The worker who is able to daydream becomes oblivious to unpleasant realities, including the potentially unsatisfactory features of repetitive work. For example, a girl in a British factory spent a few minutes in the morning preparing her machine and material for the day's job. After that "she married a duke, took a trip to the Riviera, rented a mansion on the West End," and had a thoroughly delightful time while she worked.[9]

I have carried on my own informal study of this problem of monotony by interviewing my colleagues from time to time. For example, I would interrupt an examining practicing physician or intern and ask him what he was thinking about. He would often appear startled, smile sheepishly, and you would be amazed at the content and the irrelevancy of his thoughts.

Some physicians have confessed that the rapt expression they were wearing while listening to the heart had nothing to do with the rhythmic and soporific beat of the normal heart they were examining. Others admit they have repeated part of an examination completely oblivious of so doing until notified by the perplexed patient.

Engaging in fantasy is a harmless and sometimes even a productive mental activity, but it does not conduce to accuracy in diagnosis. It may be difficult to recognize and harder to resist. Industrial psychologists have shown a correlation between the onset of boredom and a decrement in productivity, and, more important, it is related to industrial accidents. A study more formal than my own of physicians might be revealing, especially with respect to preventing accidents of diagnosis.

So, added to your other worries is the tedium of your work.

The three challenges can be summarized as (1) the relentless pressure to keep informed, (2) the exigent need to maintain balanced values between cold scientific rationalism and humaneness, and (3) the need to remain vigilant though bored.

Treatment or Resolution

By this time you may have concluded that, like a typical neurologist, I have analyzed the problem, made a bleak diagnosis, and offered no treatment or resolution.

But I do offer a solution. In addition to practicing in your field, teach. All three challenges I have outlined can be met. You will be kept informed by your students. Since your management of and relationship with your patient will be subject to scrutiny and criticism by those you teach, you will be committed to exemplary practice. And finally, the diversification of your activities and the stimulation and challenge of teaching will relieve the monotony of your routine.

Although a medical school provides the best opportunity for teaching experience, the community hospital is offering, needing, and demanding more teaching effort from the physicians who use its resources. Accreditation boards quite properly demand more formal teaching programs. A greater proportion of the future medical student's education will be in hospitals, and there are sound reasons for increased emphasis on postdoctorate education. There is a need to extend the period of hospital training, which will correspondingly enlarge the responsibility of many community hospital teaching staffs. This changing emphasis further reflects a fundamentally new direction and dimension of medical education which will impose increasing demands on the practicing physicians of the community to help teach the resident staff and also their colleagues, especially in a community hospital or in group practice.[10] Further, it is my personal conviction that tutorial training at the bedside or in the laboratory for students and graduates will replace many of the other teaching techniques. This will thus demand an even higher ratio of teacher to trainee and will emphasize the central role of the practicing clinician.

I would urge you to accept the call and the challenge to communicate your knowledge and remind you of the oath of Hippocrates to which you are committed: "I will impart this art by precept, by lecture, and by every mode of teaching, not only to my own sons but to the sons of him who has taught me and to disciples bound by covenant and oath according to the law of medicine."

Teaching students and colleagues and caring for the indigent, often a simultaneously performed service, are ancient and inherent obligations and privileges of physicians. These are not charity but a debt of honor—a debt of honor to our predecessors, to our tradition, and to our Judeo-Christian ethics. In the Hebrew language there is no word for charity, only *zeddakah*, which means sharing.

Intellectual stimulation and emotional maturing will be your recompense for the time and effort given to teaching. You will observe, as Maimonides did, "Disciples increase the teacher's wisdom and broaden his mind. Much wisdom I learned from my teacher, more from my colleagues, from my pupils most of all. Even as a small piece of wood kindles a large log, so a pupil of small attainment sharpens the mind of his teacher so that by his questions he elicits glorious wisdom."

By teaching, your own continuous education will be assured and you will acquire not only information and skill, but understanding, insight, and compassion.

Teaching is a uniquely gratifying experience and provides the opportunity to fulfill your obligations to your community, to your patients, and to yourself. Time and experience and continuous contacts with young inquiring minds will mitigate in large measure the frustrations and tedium inherent in the demanding career of service.

There will be moments of perplexity, of self-derogation, of frustration, and of despair. Be patient. Remember the heartening words in the Apocrypha of Ecclesiasticus, "For at first wisdom will walk with him by crooked ways and bring fears and dread upon him and torment him with discipline until she may trust his soul and try him by her laws, then will she return the straight way unto him and comfort him and show him her secrets."

May God bless you and keep you—not only well but well-informed. May your skills be enhanced, and may your right hand never forget her cunning. May your mind and spirit be enriched by *zeddakah*. May you find wisdom and the place of understanding, and, above all, may you dwell in peace.

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Woman's Auxiliary Notes

The Woman's Auxiliary to the Medical Society of the District of Columbia held its regular monthly meeting on Wednesday, January 9, in the library of the Medical Society's Building. After a short business meeting, Dr. Andrew A. Marchetti, Professor of Obstetrics and Gynecology at Georgetown University School of Medicine, gave a delightful and informative talk on "Grapes, Wine, and Romance." Welcomed guests from the District of Columbia Medical Society were Dr. Karl C. Corley, President, Mr. George W. Cooley, Secretary, and Mr. Fred E. Trust, Assistant Secretary.

At the February meeting plans were completed for a Fashion Show-Luncheon to be held at the Mayflower Hotel on March 13. The proceeds will benefit the nursing scholarship fund and the American Medical Association Education and Research Foundation. Tickets, at $7.50, may be obtained from Mrs. Peter Murphy, Oliver 6–9711.

CARCINOMA of the ESOPHAGUS

Dysphagia is the Cardinal Symptom

Characteristic radiographic appearance of carcinoma of esophagus

Carcinoma of the esophagus constitutes 4 per cent of all malignancies

In almost two-thirds of the patients with carcinoma of the esophagus, dysphagia is the initial symptom and is present in *95 per cent* of such patients at the primary examination by a physician. This is the only relatively early, useful index by which to adjudge the indication for a barium swallow examination in symptomatic patients.

Reappraisal in recent years of the results of surgery combined with preoperative irradiation therapy has provided reports of more encouraging results in terms of improved palliation and the extension of curability.

RESEARCH
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A monograph, "Cancer of the Esophagus and the Stomach" is available upon request for physicians.

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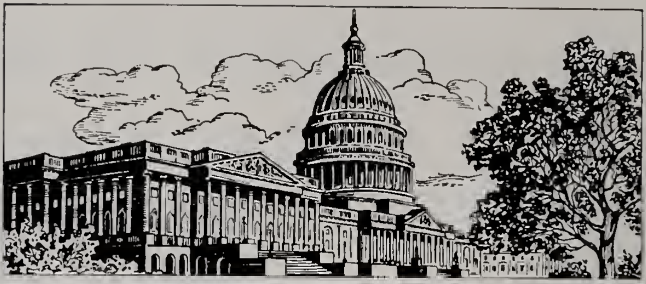

NEWS & PERSONALS

Meetings

The Washington School of Psychiatry is sponsoring a **public lecture** on "Historical Perspectives on Psychotherapy," to be held Friday, March 15, at 8:30 p.m., in the auditorium of the D. C. Medical Society Building. The speaker will be Dr. Franz Alexander of Mt. Sinai Hospital, Los Angeles.

The Eighth Annual Postgraduate Course in General Medicine, sponsored jointly by Arlington Hospital and the Virginia Academy of General Practice, is currently in progress. The meetings are held on Wednesdays, from 1:00 to 2:00 p.m., in the Conference Room of Arlington Hospital. The last two sessions, scheduled for March 20 and 27, will feature the following addresses:

"Diagnosis and Treatment of Occlusive Arterial Disease," Dr. Charles A. Hufnagel, Professor of Surgery, Georgetown University School of Medicine.

"Blood Lipids Revisited," Dr. Donald S. Fredrickson, Clinical Director, National Heart Institute, National Institutes of Health.

All physicians are invited to these meetings; there is no registration fee. Credit for postgraduate study is given by the American Academy of General Practice.

Sandwiches and coffee are served at 12:30 p.m.

The Providence Hospital Medical Alumni Association announces a **Quarterly Symposium** to be held, March 14, in the Lecture Hall at the Hospital. Dr. Kenneth L. McCoy, Director of the Department of Pathology, is in charge of the program. Physicians are cordially invited to attend. There is no registration fee.

The following three papers will be presented:

9:30 a.m.: "The Role of Blood Transfusion in the Treatment of the Anemic Patient," Colonel William H. Crosby, MC, Chief, Department of Hematology, Walter Reed Army Institute of Research

10:15 a.m.: "The Post Splenectomy Patient," Dr. John W. Rebuck, Chief, Division of Hematology, Department of Laboratories, Henry Ford Hospital, Detroit

11:30 a.m.: "Iron Deficiency Anemia: Problems in Diagnosis and Treatment," Dr. John B. Miale, Professor of Pathology, University of Miami School of Medicine

The D. C. Medical Society's new Section on General Surgery will hold a meeting on March 27 in the Medical Society's Building. The meeting will be devoted to the business problems of the general surgeon. Three problems affecting surgeons will come up for discussion:

1. Increase in annual salary of house officers.
2. Can local community hospitals, i.e., those not affiliated with the Universities in this area, develop a coördinated and consolidated teaching and educational program to improve patient care and also to increase the number of approved internships and residencies in each hospital?
3. Contemplated changes in the unit scale, relative value scale, insurance fees, etc.

At the first meeting of the Section last November the following officers were elected:

Dr. James H. Scully, *President*; Dr. Vincent M. Iovine, *Vice President*; Dr. Louis J. Goffredi, *Secretary*; Dr. Philip H. Philbin, *Treasurer*; Dr. Brooks G. Brown and Dr. Duane C. Richtmeyer, *members of the Executive Council.*

The U. S. Naval Medical School is holding a **Seminar in Clinical Pathology** with lectures each Wednesday from 1:00 to 2:00 p.m. They began on January 16 and will continue through June 12.

Dr. George E. Schreiner, Professor of Medicine at Georgetown University School of Medicine, will be the lecturer on March 20 and 27. His topics for presentation will be "The Biochemistry of Uremia" and "The Clinical Microscopy of Pathologic Urinary Sediments," respectively.

During April the following lectures are scheduled:

April 3: "Current Hematologic Problems," Dr. Charles Brodine, Naval Medical Research Institute

April 10: "Thrombocytopenia," Dr. Leandro M. Tocantins, Jefferson Medical College

April 17: "A Critical Evaluation of Bacterial Sensitivity Methods," Dr. S. Brandt Rose, Chestnut Hill Hospital, Philadelphia

April 24: "The Clinical Importance of the Blood Factor D^u," Dr. Paul Schmidt, National Institutes of Health.

Captain Paul F. Dickens, Jr., MC, USN, Commanding Officer of the Medical School, extends a cordial invitation to members of the Society to attend the lectures. This weekly seminar series in the various branches of clinical pathology is intended to further the better appreciation of laboratory diagnostic procedures in clinical medicine.

The American College of Physicians will convene for its **Forty-fourth Annual Session** in Denver, Colorado, April 1–5. Participating in the scientific program will be a number of Washington physicians, including Drs. Sol Katz, John J. Canary, George E. Schreiner, and John F. Maher. Dr. Wallace M. Yater, Secretary-General of the College, will also attend the annual meeting.

The American Society of Internal Medicine will hold its Seventh Annual Meeting, preceding the meeting of the College, at the Brown Palace Hotel, Denver, March 29–31. Dr. Luther L. Terry, Surgeon General of the Public Health Service and an Honorary member of the D. C. Medical Society, will be one of the speakers, March 31. His subject will be "The Impact of Government on the Future Practice of Internal Medicine."

Hahnemann Medical College and Hospital will sponsor its **Ninth Hahnemann Symposium,** April 15–17, 1963, at the Sheraton Hotel in Philadelphia. Dr. Bernard L. Segal will be Director of the Symposium, which will be concerned with "The Theory and Practice of Auscultation." Registration is limited to 1,000.

Taking a prominent part in the program will be Dr. W. Proctor Harvey, Associate Professor of Medicine, Georgetown University School of Medicine. Dr. Harvey will be moderator for several panel discussions and will also present two papers. Other Washington participants will be Drs. James J. Leonard, Joseph K. Perloff, Thomas W. Mattingly, and Jack P. Segal.

The Sixth Annual Cardiac Symposium, co-sponsored by the Heart Association of Northern Virginia and the Washington Heart Association, will be an all-day meeting on Wednesday, April 10, at the Marriott Twin Bridges Motel. Co-chairmen of the Program Committee are Dr. Joseph Beinstein, Arlington, Va., and Dr. W. Proctor Harvey, Washington. Physicians are urged to watch for further details through the mails.

Boards & Committees

The meeting of the **Executive Board of the Medical Society of the District of Columbia** was called to order by the Chairman, Dr. W. LeRoy Dunn, January 28, 1963. Present were: Drs. Karl C. Corley, Edward W. Nicklas, Victor Alfaro, J. Spencer Dryden, Raymond T. Holden, and Mr. George W. Cooley, Secretary. Also present were: Drs. J. Rogers Young, Grace H. Guin and C. Willard Camalier, Jr.

Items of Business

1. The minutes of the December 17 meeting were approved with one change.

2. Finance Committee

(a) It was voted to remit the dues of 10 members for 1963.

(b) Insurance on 1710–18 M Street—A proposal from the F. W. Berens Company to combine 5 of the present policies into a single multiperil policy was reviewed and referred to the House Committee for consideration and report back to the Executive Board.

(c) The Secretary reported that 22 members were dropped from the Society's membership roster for nonpayment of dues, in accord with Chapter IV, Article III of the Constitution and By-laws.

(d) The Executive Board reviewed the audit of the Society's income and expenses for 1962 by Wayne Kendrick and Company, Certified Public Accountants, and voted to accept the audit as submitted.

(e) Prior to July 1962 none of the Bureau operators had been covered under the

Society's group Medical-Hospital Service Plan. In July of last year the Executive Board agreed those who were eligible and wished to join the group could do so provided they paid for the coverage. At the January 1963 meeting, the matter of paying for the Bureau operators' coverage was reconsidered and it was voted that BC-BS coverage now available to office employees be made available at Bureau expense to eligible Bureau operators who wish to participate and who are otherwise not covered.

(f) It was voted to authorize the purchase of new dictating equipment to replace old equipment which is no longer usable.

3. Change in Committee Structure

The Executive Board created 2 new Special Committees and revised the name and functions of an existing Special Committee. To concentrate on the varied facets of the new Federal law in reference to tax deductions on funds set aside by physicians for retirement, the present Committee on Insurance was retitled "Ad Hoc Committee on the Keogh Act and Related Problems." To follow through on the action of the Executive Board in November approving the American Medical Political Action Committee, a new Special Committee was created entitled "AMPAC Committee of D. C." In response to a request from the American Medical Association it was voted to create a Committee on Medicolegal Activities. Dr. Corley, the President, was authorized to proceed to name the membership of these two committees.

4. Resolution 31 (AMA of November 1962) on Blue Shield

The Board considered a resolution received from Dr. Blasingame urging the constituent Associations "to continue their efforts to promote aggressively and consistently the development of Blue Shield senior citizen programs so that they may offer a practical fiscally responsible means for meeting the costs of the health needs of our senior citizens on a continuing basis."

It was voted that a communication be sent to BC-BS pointing out that the Executive Board agrees wholeheartedly with this resolution, congratulating Medical Service of D. C. on the steps it has taken to date and urging Blue Cross to develop a companion program so that this entire project will not be postponed indefinitely in the District of Columbia. The resolution was also referred to the Committee on Medical Care for consideration.

5. Resolution 43 (AMA of November 1962) on Hospital Planning

This resolution concerning regional hospital planning received from Dr. Blasingame was discussed and referred to the Committee on Medical Care for consideration and such implementation as may seem feasible to that Committee.

6. Cancer Morbidity Review Committee

A complete report on the year's activities of this Committee was reviewed by the Executive Board and it was voted to refer a condensed review of these activities, entitled "Cancer Morbidity Review," to the Editor of the ANNALS for his consideration as to publication.

7. Occupational Health Fee Schedule

Dr. J. Rogers Young reported briefly on his efforts to obtain approval of the Workmen's Compensation underwriting insurers for a revised Workmen's Compensation Fee Schedule for the District of Columbia. To date no agreement has been arrived at and a final report will need to await a later meeting of the Executive Board.

8. Committee Activities

The Secretary reported that the following Committees had held meetings since the Board last met:

December 18	Grievance
December 20	Public Health
December 20	Review Committee for the Medicare Program
January 4	Review Board for Prepaid Medical Care Benefits

9. New Member

The Executive Board voted to approve the application for membership of Dr. George R. Ray as submitted by the Board of Credentials.

10. Resignations and Changes in Membership Status

The Executive Board reviewed a number of letters of resignation from physicians who have moved elsewhere, as well as requests for changes in membership status.

11. Mental Health Conference

The Executive Board voted to pay the expenses of Dr. Leon Yochelson, Chairman of the Society's Committee on Mental Health, to the National Conference on Mental Health, scheduled in Chicago, March 1 and 2.

12. Medicolegal Conference

The Executive Board voted to pay the expenses of Mr. Warren Magee, Legal Counsel for the Society, to attend the Medicolegal Conference of the AMA in Miami Beach on March 8 and 9.

13. Health–USA Award

The Executive Board reviewed the feasibility of co-sponsoring this project for 1963 with the Board of Trade. Since on at least one occasion in the past the Executive Board had urged that the planning of this project begin early in the fall, and since the beginning of such a project at this late date made it difficult to work out a proper program, it was agreed that the Society take no action on co-sponsoring the Health–USA Award for 1963.

General News

Georgetown University has announced receipt of a grant of $150,000 from the Ford Foundation for the development of a center to carry out research and training in biological and sociological aspects of population problems. The project will cover a 3-year period. Dr. Benedict J. Duffy, who was on the medical faculty of Georgetown from 1953 to 1959, will be Executive Director of the program. Dr. Duffy returns to Washington from Seton Hall University, where he has served as Professor of Preventive Medicine.

Dr. Franklin T. Brayer, Associate Professor of Medicine at Georgetown, and Dr. Harold Dorn, of the National Institutes of Health, will serve on the Policy Committee for the operation of the center's program.

A National Institute of Child Health and Human Development has been established by the Public Health Service. Authorized by Congress in October, 1962, it will supplement and reinforce research in the health status, needs, and problems of people in the various stages of development.

Dr. Robert A. Aldrich, formerly Professor and Chairman of the Department of Pediatrics, University of Washington School of Medicine, is Director of the new Institute. An alumnus of Northwestern University School of Medicine, Dr. Aldrich served as Associate Professor of Pediatrics at the University of Oregon before he was affiliated with the University of Washington. He is a diplomate of the American Board of Pediatrics.

The Center for Aging Research and the Center for Research in Child Health will provide the nuclei of the new Institute. The other Institutes of NIH will continue their research in their special disease categories with respect to children and elderly people.

The Metropolitan Medico-Legal Society was organized, January 30, 1963. The purpose of this new Society is to help educate physicians in the area concerning medicolegal matters and to develop a greater degree of coöperation with the legal profession. The officers elected were:

Dr. Samuel M. Becker, *Chairman*; Dr. Luther W. Gray, *Vice Chairman*; Dr. Frederick B. Hartsock, *Secretary-Treasurer*; and Dr. Margaret M. Kenrick, *Historian*.

Drs. Oscar Lavine, Hugo V. Rizzoli, and W. Ronald Strong, together with the officers, constitute the Executive Committee.

Membership is open to practicing physicians in the Washington Metropolitan Area who are members of their local medical societies. Applications for membership may be secured from Dr. Frederick B. Hartsock, 1712 Eye Street, N.W., telephone 298–6955.

Dr. Austin B. Chinn has been appointed Chief of the newly created **Gerontology Branch of the Division of Chronic Diseases,** Public Health Service. He will direct the first operating program within PHS geared exclusively to meeting the health needs of the aging and aged.

Dr. Chinn, formerly Associate Dean of Western Reserve University School of Medicine, has had broad experience in the field of gerontology. Since 1959 he has been Chairman of the University's Committee on Aging Research, and was principal investigator of a 2-year (1960–62) project to develop an integrated interdisciplinary program of research in aging. In 1961 he was a delegate from Ohio to the White House Conference on Aging. Since last year he has been Associate Editor of the *Journal of Gerontology*.

Dr. Chinn, a graduate of the University of Virginia School of Medicine, practiced internal medicine in Washington from 1936 to 1942. During those years he was on the staff of George Washington University School of Medicine.

Three nearby medical societies have recently elected officers for 1963. **The Alexandria Medical Society** installed Dr. Calvin MacRae as President at its December meeting and elected the following new officers:

Dr. Adrian J. Delany, *President-elect*; Dr. Emory F. Hodges, *Vice President*; Dr. C. A. Loughridge, *Secretary*; and Dr. Herman I. Slate, *Treasurer*.

At its January meeting, Dr. Robert O'Donnell became President of the **Fairfax County Medical Society.** Elected to office were:

Dr. Kenneth Berger, *President-elect*; Dr. Edward Gallegher, *Vice President*; Dr. C. Barrie Cook, *Secretary*; and Dr. Thomas Wright, *Treasurer*.

Dr. Robert B. Neu assumed the presidency of the **Arlington County Medical Society** at its December meeting. The following officers will serve with him during 1963:

Dr. Joseph O. Romness, *President-elect*; Dr. Sidney A. Tyroler, *Vice President*; Dr. John J. Nolan, *Secretary*; and Dr. Gerald J. Fisher, *Treasurer*.

Miss Beatrice E. Ritter, Director of Nursing at District of Columbia General Hospital and head of the Capital City School of Nursing, retired, November 17, after 27 years of service to her profession. Before coming to D.C. General Hospital in 1954, Miss Ritter served as Director of Nursing at Binghamton (N.Y.) Hospital. Miss Ritter was named "Outstanding Woman of the Year" for 1962 by the Washington Business and Professional Women's Club.

Personals

Dr. Charles D. Shields, Executive Director of Georgetown University Medical Center, has been appointed by Surgeon General Luther L. Terry of the Public Health Service to a special Advisory Group on Community Health Services. This Group will furnish guidance to PHS in developing programs which will help bring the benefits of health knowledge to people in communities across the Nation. A permanent Advisory Group, it is made up of leaders in health administration, medical research, education for the health professions, and other related disciplines, and replaces an ad hoc committee which has been advising the Public Health Service on community health grants. The new Group held its first meeting in Washington, February 7 and 8.

Dr. John F. Preston relinquished his duties, February 1, as Medical Director of *The Evening Star*, a post he has held for 34 years. He will continue his private practice on a part-time basis at 1150 Connecticut Avenue, N.W.

Dr. Emmett P. Madigan, general surgeon here since 1951, succeeds Dr. Preston. Dr. Madigan graduated in medicine from Georgetown University in 1943 and received the degree, Master of Surgery, from Georgetown in 1951. He has continued his association with the University as Clinical Assistant Professor of Surgery of the Medical School. Dr. Madigan is on the attending surgical staffs of Georgetown, Providence, Mt. Alto Veterans Administration, D. C. General, Surburban, and Holy Cross Hospitals. He is a Fellow of the American College of Surgeons and a diplomate of the American Board of Surgery.

Dr. Preston was honored by a reception at *The Star*, January 10, which was attended by more than 100 employees of the newspaper.

Dr. Hugh H. Hussey, formerly Dean of Georgetown University School of Medicine, was guest of honor at a dinner of the Georgetown Clinical Society at the Broadmoor, January 16. Presiding was Dr. Richard J. Meyer, President of the Society.

Himself an "Old-Timer" member of the Society, Dr. Hussey addressed one of the largest gatherings in the Society's history on the subject, "Georgetown Medical School—Past, Present and Future." He also elaborated on his own plans for the future as Medical Director of Scientific Activities for the American Medical Association. He was presented with a gift as a memento of the occasion.

Dr. Hussey assumed his new duties with the AMA in Chicago, March 1.

Dr. Julian W. Giles was appointed Director of the Veterans Administration Hospital in Tuskegee, Alabama, December 14. He has served recently as Acting Chief of Staff at the Hospital, having joined the staff 3 years ago as Chief of the Ear, Nose and Throat Section. Dr. Giles, a graduate of Howard University School of Medicine, practiced in Washington for a number of years.

The Tuskegee Hospital was first known as a Veterans Administration Hospital for Negro Disabled Soldiers when it was opened in 1923. Today patients are admitted without racial discrimination. While the facility was largely used for psychiatric patients in the past, its use for medical and surgical patients has steadily increased in recent years.

Dr. Edward D. Soma, formerly of the Department of Radiology at Georgetown University Hospital, assumed new duties, January 5. He is Chairman of the Department of Radiology of the new Holy Cross Hospital in Silver Spring, Md.

Dr. Daniel L. Weiss, who has served as Director of the Institute of Pathology and Laboratory Medicine of the D. C. General Hospital, left Washington in January to accept the post of Professor of Pathology at the University of Kentucky College of Medicine at Lexington.

Dr. William S. Middleton, head of the Department of Medicine and Surgery, Veterans Administration, retired, February 28, upon completion of his second 4-year term. Dr. Middleton, who is Dean Emeritus of the University of Wisconsin School of Medicine, will return to Madison briefly. In July he goes to the University of Oklahoma at Oklahoma City to assume a special post on its faculty of medicine.

Dr. Preston A. McLendon, a member of the District of Columbia Board of Education and formerly Chairman of the Youth Advisory Board to the District Commissioners, was cited by Commissioner Walter N. Tobriner for his "distinguished service in many capacities to the District." Dr. McLendon received a Certificate of Meritorious Public Service, January 15, in the Commissioner's offices.

Dr. William P. Herbst has been reappointed a member and Chairman of the Hospital Advisory Council to the District Commissioners. **Dr. Walter L. Henry** was also reappointed by the Commissioners to membership on the Council.

The Washington Area Council on Alcoholism elected officers, January 25. **Dr. William Earl Clark** was named an Honorary Vice Chairman. Among the active officers elected was **Dr. Sanford L. Billet**, who will serve as Secretary. Dr. Billet is Chief of the D. C. Bureau of Mental Health and Chief of its Alcoholic Rehabilitation Division.

Dr. James M. Corcoran has been elected to the Board of Managers of Christ Child Settlement House, which is a major activity of the Christ Child Society. The latter, now 75 years old, pioneered in settlement work in the District of Columbia. The Settlement House does family case work and carries on a recreation and counseling program in liaison with Area P of the District Commissioners' Youth Council.

Dr. Norman W. Harris, Sr., and Dr. Lloyd H. Newman were among the faculty members of Howard University who were honored for length of service to the University in special ceremonies, January 21, at Baldwin Hall. Dr. Harris, Clinical Assistant Professor of Medicine, has a record of 41 years on the faculty, and Dr. Newman, Professor of Biochemistry, has given 40 years' service to Howard.

DR. ETHRIDGE CITED BY HEART ASSOCIATION: Dr. Clayton B. Ethridge (left) receives the Award of Merit for Distinguished Service to the American Heart Association from Dr. James V. Warren, President of the Association, at its Annual Meeting in Dallas, Texas, December 15.

Dr. Ethridge has served on the AHA Board of Directors and on several committees and has been an active Board member of the Washington Heart Association. He is Professor of Medicine and Director of Postgraduate Education at the George Washington University School of Medicine. He is also consultant in cardiology to a number of hospitals in Washington and Virginia and is consultant in internal medicine to the U. S. Naval Hospital in Bethesda, Md.

Dr. Seymour Alpert has been elected General Chairman of the United Jewish Appeal of Greater Washington, Inc. He is a former Vice President of the area UJA and the first physician to head the organization in Washington.

Dr. Frank S. Caprio has been awarded an Honorary Fellowship by the American Medical Writers' Association. Dr. Caprio, an alumnus of George Washington University School of Medicine, has contributed many articles to the literature in the field of psychiatry. He has also written many articles for lay magazines.

Dr. Lawrence J. Thomas is serving this year as President of Phi Lambda Kappa national medical fraternity.

Two New Life Members

Chapter II, Article III, of the Constitution of the Society, reads as follows:

"Life members shall be Active members who have been Active members for a total of forty years. They shall have all of the privileges of

Active membership and shall be exempt from paying dues and assessments."

Our honor roll now numbers 68. The congratulations of the Society are extended to:

Seniority Number		*Date of Membership*
833	Thomas C. Thompson	January 3, 1923
835	Horatio N. Dorman	January 3, 1923

who have for forty years been on the roster, meeting all dues and assessments and lending their support to the Society by frequent attendance. Their status is now elevated to Life membership.

Obituaries

Frank Hough Towner, M.D.

(1879–1962)

Dr. Frank H. Towner, retired Washington physician, died, February 18, 1962, after a long illness. His death was not reported to the Executive Offices of the D. C. Medical Society until last December.

Dr. Towner was born in Washington, D. C., June 19, 1879, to Thomas B. and America Hough Towner. He attended the District public schools and Taylor University at Upland, Indiana. He received his medical degree from Hahnemann Medical College in Philadelphia in 1906.

In May, 1918 Dr. Towner enlisted in the Medical Corps of the United States Navy and served until 1931, when he retired with the rank of Lieutenant Commander. Following his retirement he accepted a full-time position as Assistant Director of the Chest Clinic, conducted by the D. C. Department of Public Health, and continued in this position for 11 years. He was also consultant in tuberculosis to D. C. General and Glenn Dale Hospitals.

With the advent of World War II, he was recalled to active duty and served in the Recruiting Station of Washington, D. C. He retired again after the War and returned to the Chest Clinic for part-time duties.

Dr. Towner was elected to Active membership in the Medical Society of the District of Columbia in 1932. He was a member of the American Medical Association, the Association of Military Surgeons of the United States, the Trudeau Society, and the Army-Navy Club.

His wife, Mrs. Frances Marsh Towner, preceded him in death. He leaves one daughter, Mrs. Carl R. Markwith, 6678-32nd Street, N.W., Washington, D. C.

Appendectomy during Pregnancy—Hawken and Chang

(*Continued from page 97*)

Summary

The details and advantages of positioning the patient in the semi-left-lateral or left modified kidney position for appendectomy during the later months of pregnancy have been described.

Positioning in this manner is not necessary until the second trimester of pregnancy. Adequate positioning is very important, since it provides adequate exposure and less trauma to the gravid uterus and also shortens the length of operation.

No postoperative complications in 14 cases were encountered in any patient, and there was only 1 fetal loss due to premature delivery following appendectomy during the second trimester of pregnancy.

In cases of acute appendicitis, appendectomy with conservative management of pregnancy is recommended regardless of the duration of pregnancy.

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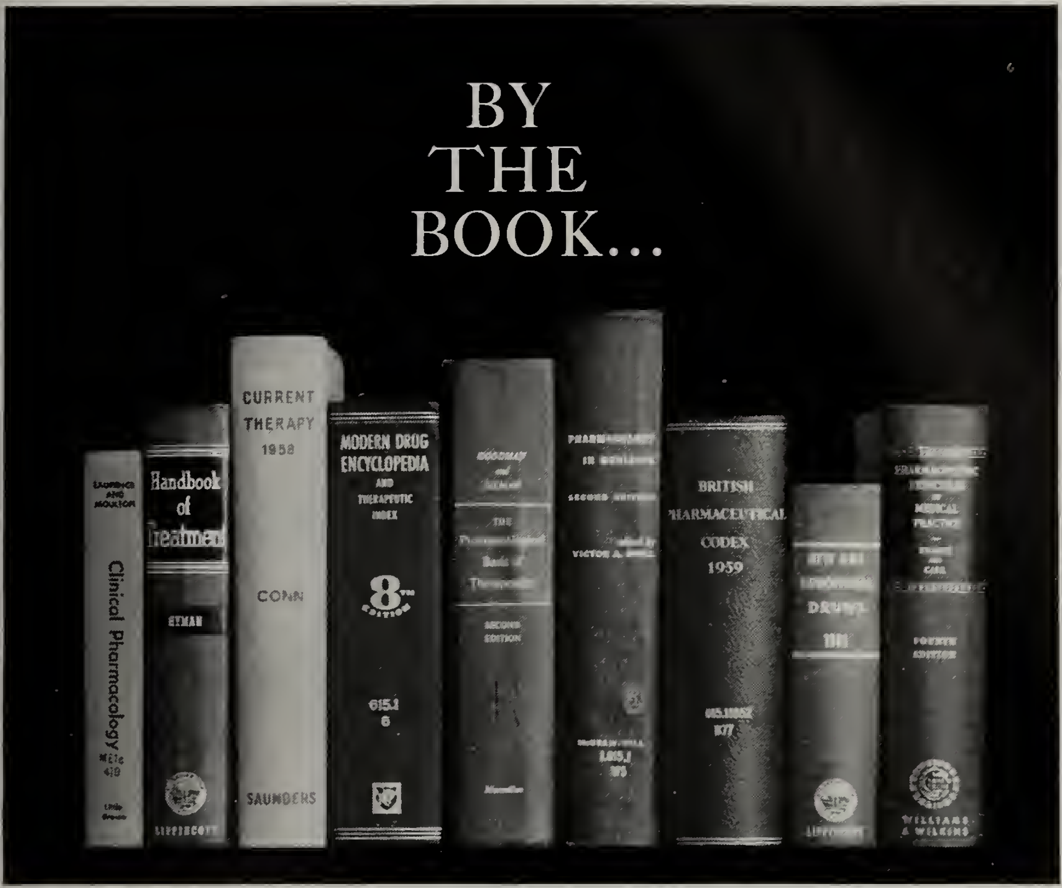
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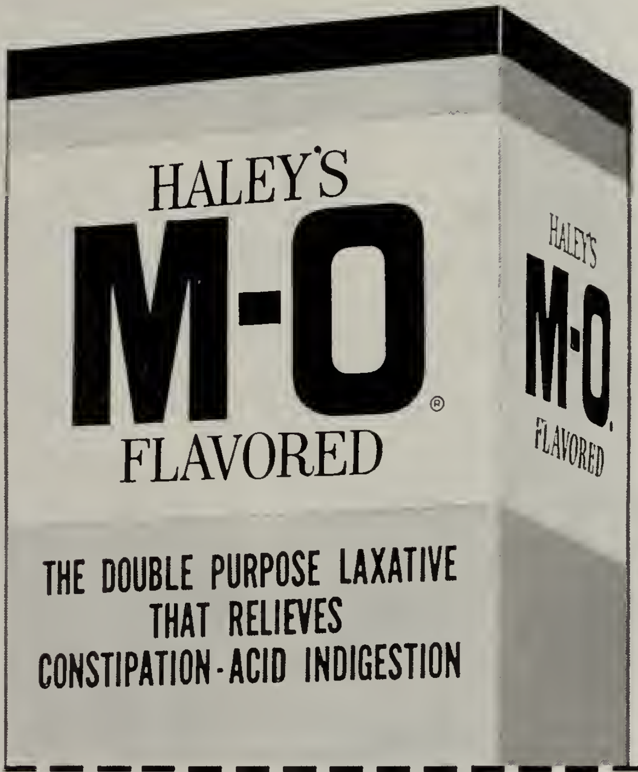
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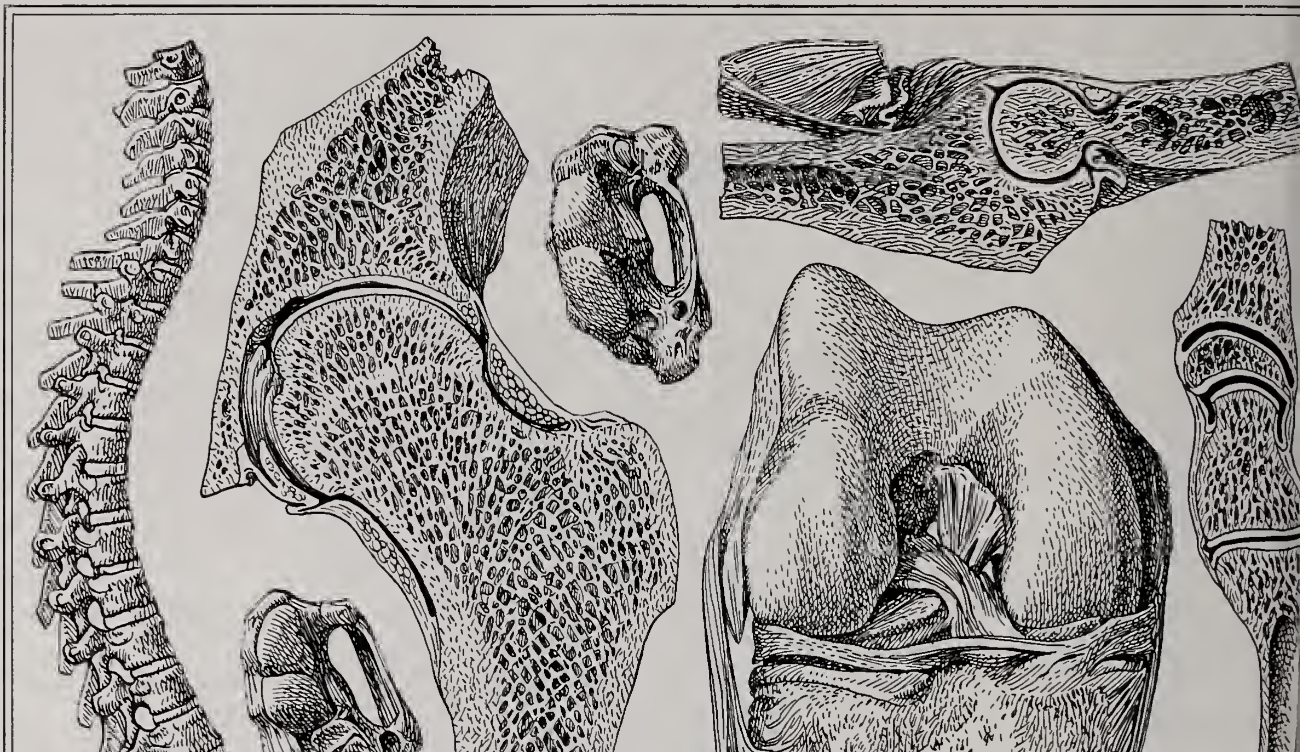
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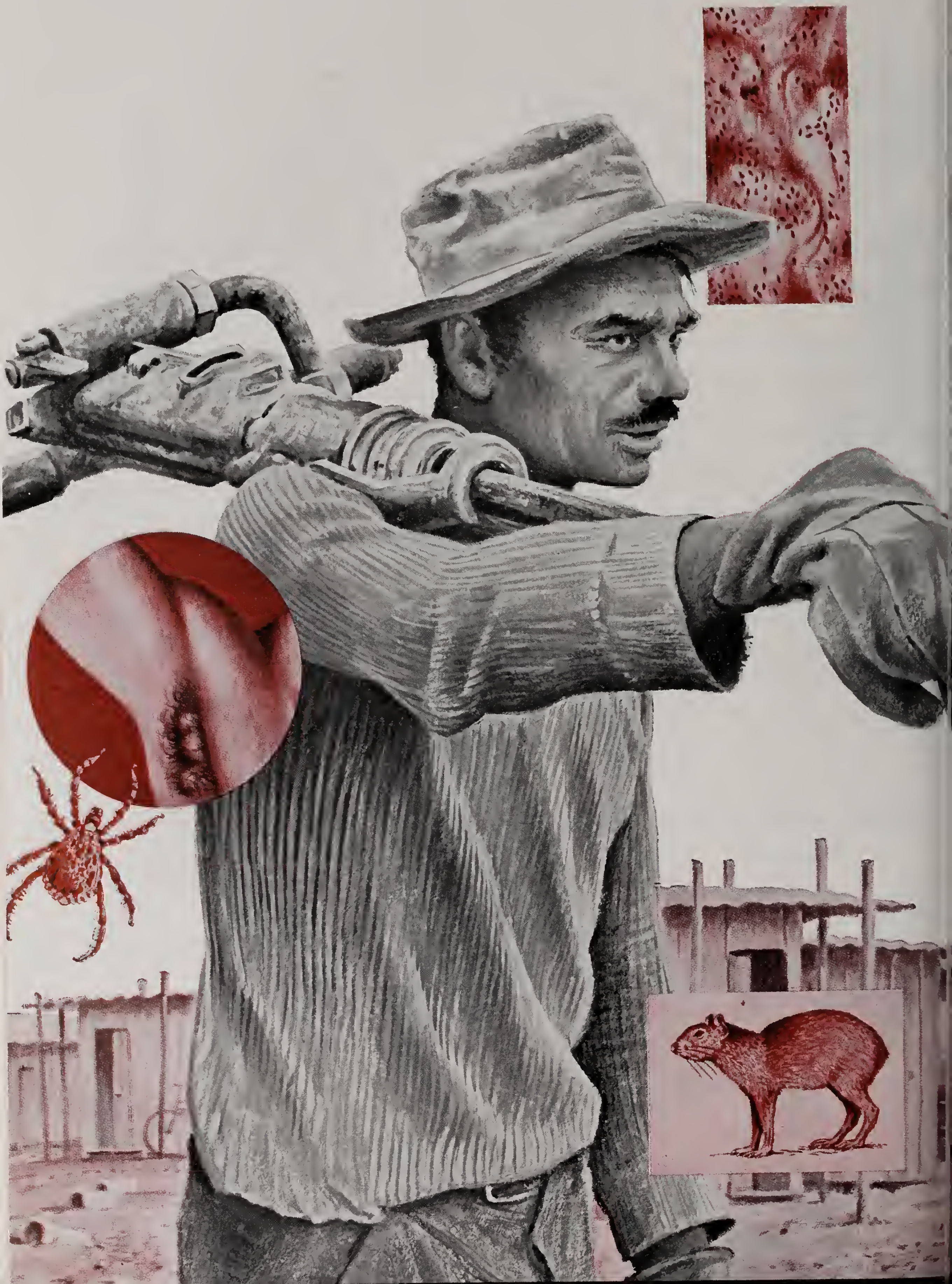

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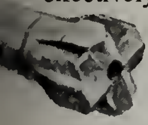

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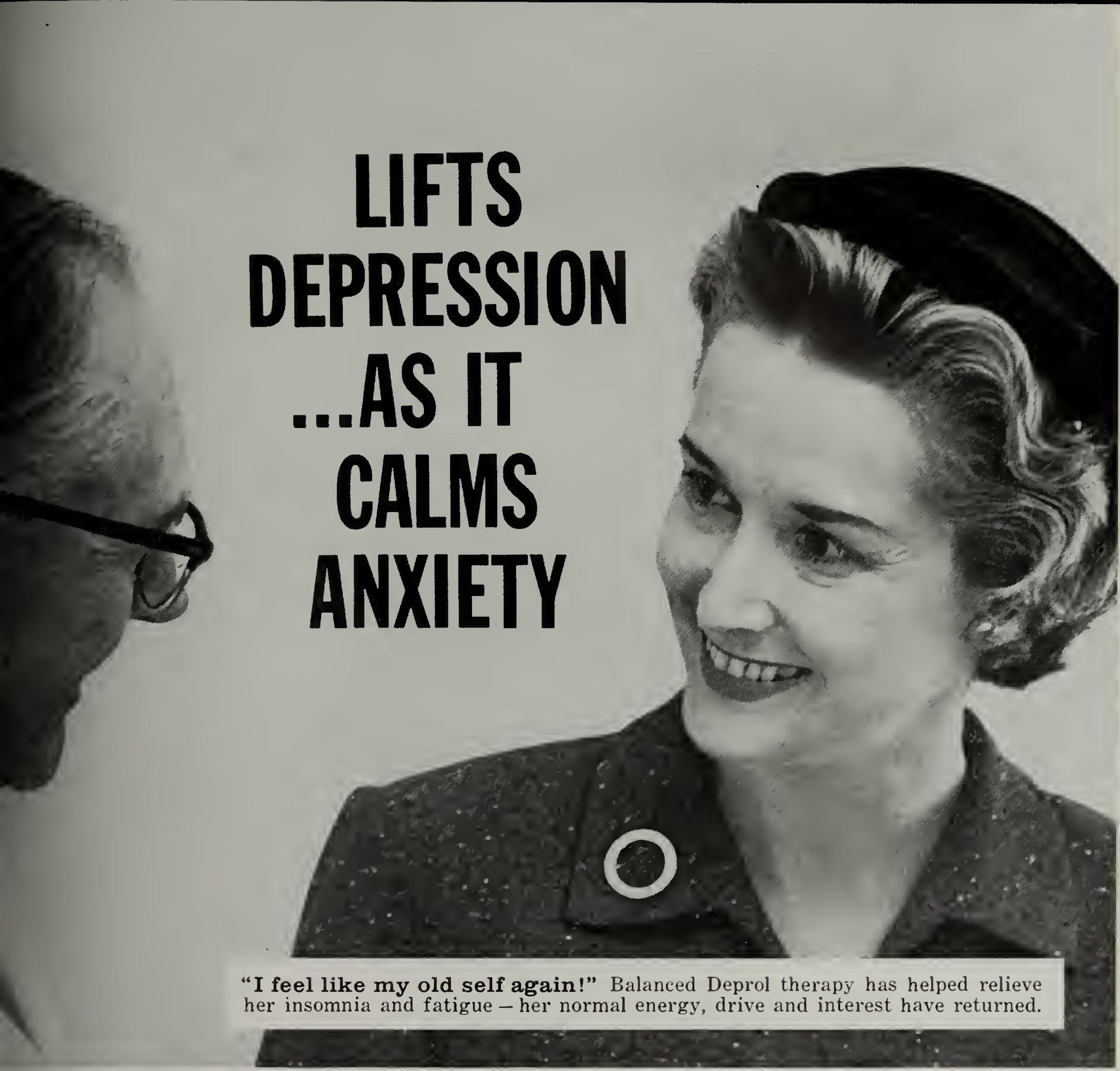

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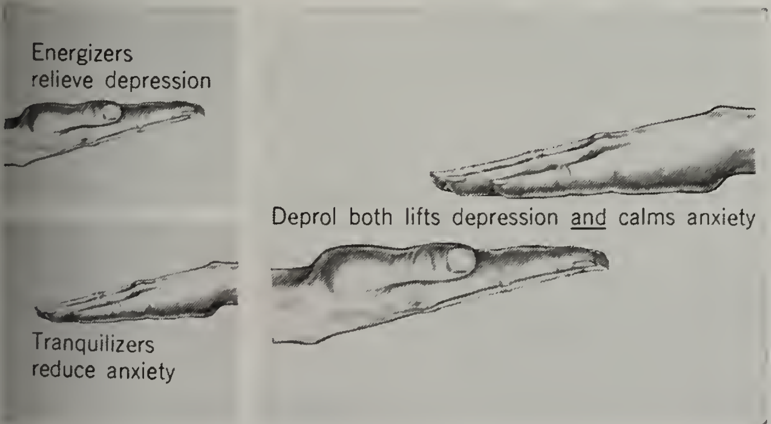
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BOOKS RECEIVED

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Gastroenterology. Volume I, 2nd ed. Henry L. Bockus, M.D., and Present and Former Colleagues at the University of Pennsylvania Graduate School of Medicine and School of Medicine. Price, $25.00. Pp. 958, illustrated. Philadelphia: Saunders, 1963.

Current Diagnosis and Treatment. Henry Brainerd, M.D., Sheldon Margen, M.D., Milton J. Chatton, M.D., and Associate Authors. Price, paper, $9.50. Pp. 843. Los Altos, Calif.: Lange Med. Publ., 1963.

Preventive Pediatrics Child Health and Development. Paul A. Harper, M.D., M.P.H. Price, $14.95. Pp. 798, illustrated. New York: Appleton, 1962.

Medical Laboratory Technology. Matthew J. Lynch, M.D. (N.U.I.), M.R.C.P. (Lond.), F.C.A.P., Stanley S. Raphael, M.B., B.S. (Lond.), Leslie D. Mellor, L.C.S.L.T., F.I.M.L.T., Peter D. Spare, F.I.M.L.T., Peter Hills, L.C.S.L.T., F.R.M.S., and Martin J. H. Inwood, L.C.S.L.T., F.I.M.L.T. Price, $12.00. Pp. 735, illustrated. Philadelphia: Saunders, 1963.

Ciba Foundation Study Group No. 13. Resistance of Bacteria to the Penicillins. A.V.S. de Reuck, M.Sc., D.I.C., A.R.C.S., and Margaret P. Cameron, M.A., Editors for the Ciba Foundation. Price, $2.95. Pp. 125, with 14 illustrations. Boston: Little, 1962.

Endocrine and Metabolic Aspects of Gynecology. Joseph Rogers, M.D. Price, $8.00. Pp. 189. Philadelphia: Saunders, 1963.

Surgery. Richard Warren, M.D., in Collaboration with 23 Members of The Department of Surgery of the Harvard Medical School. Price, $19.50. Pp. 1397, with illustrations by Janis Cirulis. Philadelphia: Saunders, 1963.

Ciba Foundation Symposium on Transplantation. Edited by G.E.W. Wolstenholme, O.B.E., M.A., M.B., M.R.C.P., and Margaret P. Cameron, M.A. Price, $12.00. Pp. 426, with 71 illustrations. Boston: Little, 1962.

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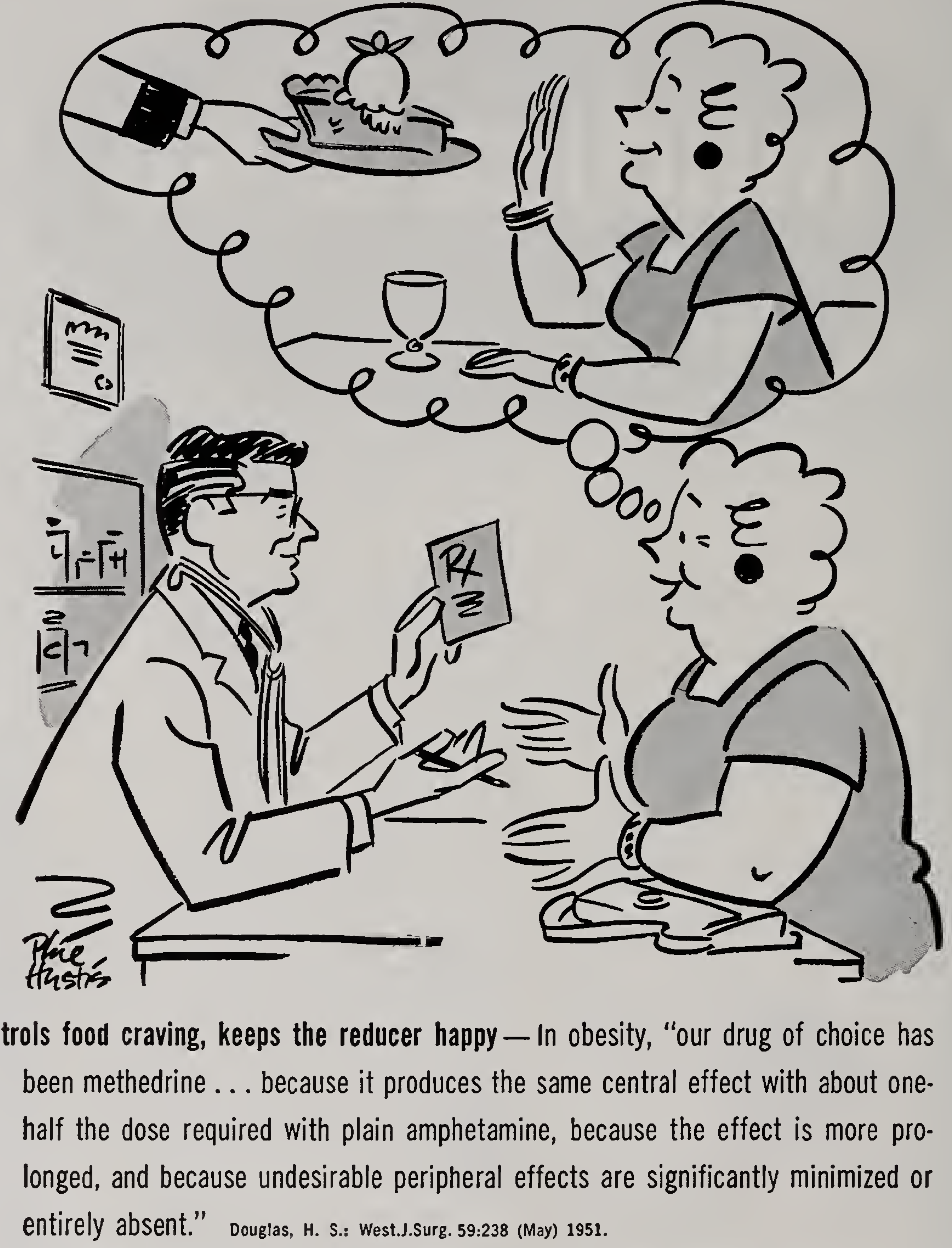

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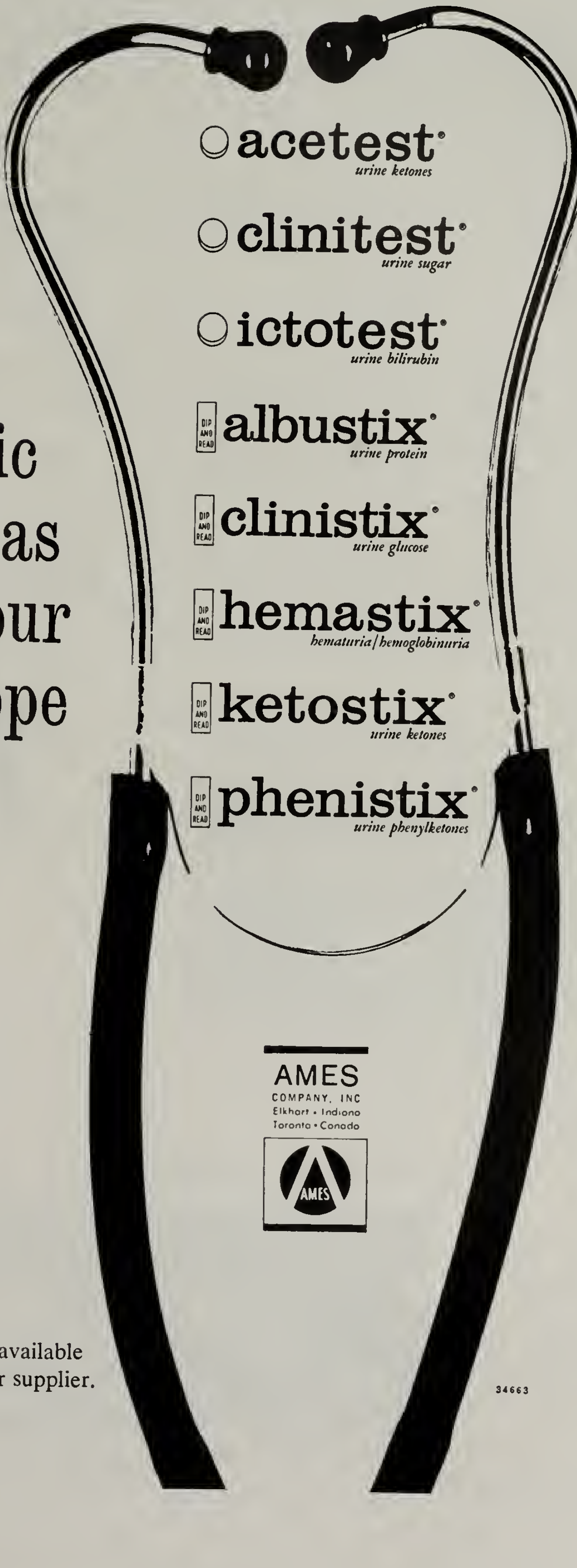

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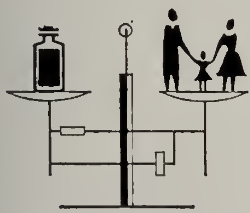

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*Asherson, N., "Acute Otitis and Mastoiditis in General Practice," H. K. Lewis & Co., Ltd., London, 1934.

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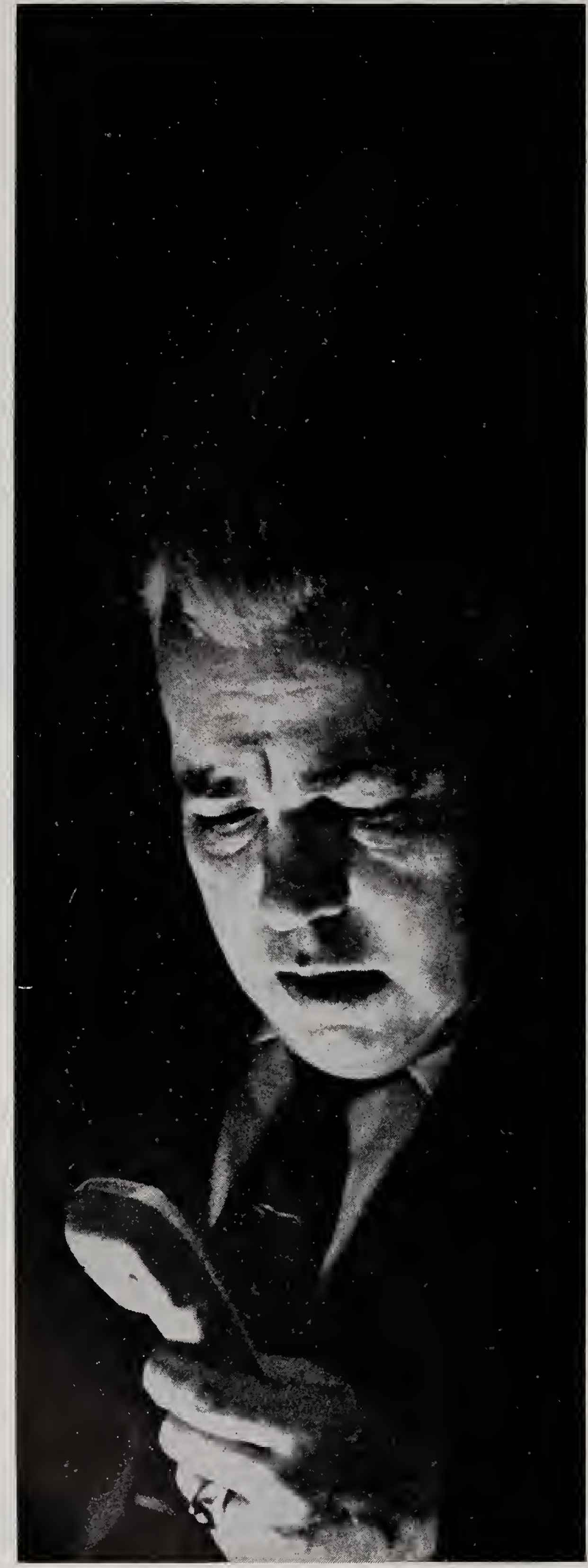

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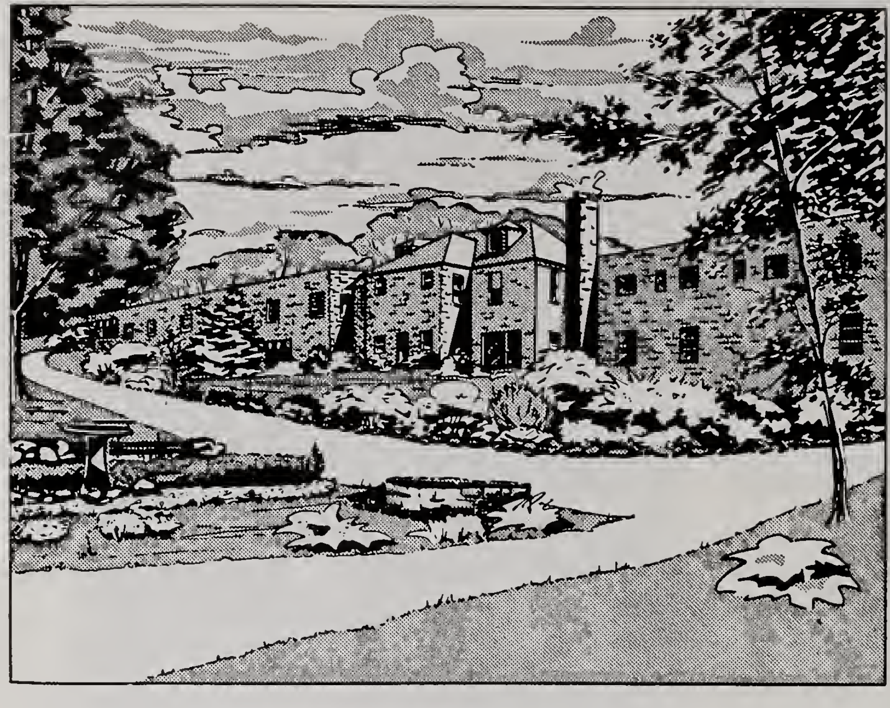

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THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA
BALANCE SHEET

December 31, 1962

ASSETS

Cash:		
General Fund	$102,943.11	
Building Fund	11,155.49	
Davidson Lecture Fund	60.89	
Bequest Fund	14,489.45	
Kober Library Fund	3,028.33	
Frank M. McChesney Fund	548.45	
Sterling Ruffin Bequest Fund	18,162.36	
Charles Stanley White Award Fund	306.42	$150,694.50
Accounts Receivable		10,304.70
Securities		18,879.09
Fixed Assets—Net after Depreciation (Land, Building—1718 & 1710 M St., N.W., Furniture & Fixtures)		224,318.48
Other Assets (Grant to Cancer Program)		4,840.02
TOTAL ASSETS		$409,036.79

LIABILITIES AND NET WORTH

Accounts Payable (Trade Creditors)	$6,431.85
Note Payable (Long-term Insurance Premiums)	682.13
Collections for Trust and Other Funds (AMA Dues 1963)	19,521.86
Other Liabilities (Grants and Taxes)	2,737.27
Deferred Income (Society Dues 1963)	55,282.29
TOTAL LIABILITIES AND DEFERRED INCOME	$84,655.40
Net Worth	324,381.39
TOTAL LIABILITIES AND NET WORTH	$409,036.79

STATEMENT OF INCOME AND EXPENSES

Year Ended December 31, 1962

INCOME:			
Membership Dues		$101,047.50	
Other Income:			
Medical Annals*		47,336.57	
Medical Bureau		122,280.70	
Second Interstate Scientific Assembly		22,739.40	
Rental Income 1710 M St., N.W.		8,954.00	
Miscellaneous		2,814.40	
TOTAL INCOME			$305,172.57
EXPENSES:			
Maintenance of Building		$7,588.42	
Maintenance of Office:			
Staff Salaries	$53,431.34		
Operating Expenses	12,826.96	66,258.30	
Society General and Special Expenses		13,583.32	
Second Interstate Scientific Assembly		21,398.06	
Expenses of Property—1710 M St., N.W.		9,061.85	

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* Includes $10,000 allotted from dues.

STATEMENT OF INCOME AND EXPENSES

(Continued)

Medical Annals:			
Salaries	$12,871.62		
Operating Expenses	45,026.40	57,898.02	
Medical Bureau:			
Salaries	$97,101.28		
Operating Expenses	26,987.11	$124,088.39	
TOTAL EXPENSES EXCLUSIVE OF DEPRECIATION			299,876.36
Excess of Income over Expenses before Depreciation			$5,296.21
Deduct: Depreciation and Transfers			(8,090.21)
NET DECREASE IN NET WORTH			$2,794.00

ESTIMATED BUDGET 1963*

INCOME:			
Membership Dues		$103,335.00	
Other Income:			
Medical Annals†		52,050.00	
Medical Bureau		122,500.00	
Annual Scientific Assembly		14,000.00	
Rental Income—1710 M St., N.W.		8,000.00	
Miscellaneous		1,500.00	
TOTAL INCOME			$301,385.00
EXPENSES:			
Building Maintenance		$9,300.00	
Office Maintenance:			
Office Staffing	$62,600.00		
Office Operation	12,650.00	75,250.00	
Society Programs		23,450.00	
Expenses of Property—1710 M St., N.W.		8,750.00	
Medical Annals:			
Salaries	$14,000.00		
Operating Expenses	42,650.00	56,650.00	
Medical Bureau:			
Salaries	$86,650.00		
Operating Expenses	33,650.00	120,300.00	
TOTAL EXPENSES			293,700.00
Excess of Income over Expenses			$7,685.00
Transfer to Building and Equipment Funds			(3,000.00)
NET EXCESS OF INCOME OVER EXPENSES			$4,685.00

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* Adopted at the Annual Business Meeting of the Medical Society of the District of Columbia, November 14, 1962.

† Includes $10.000 allotment from dues.

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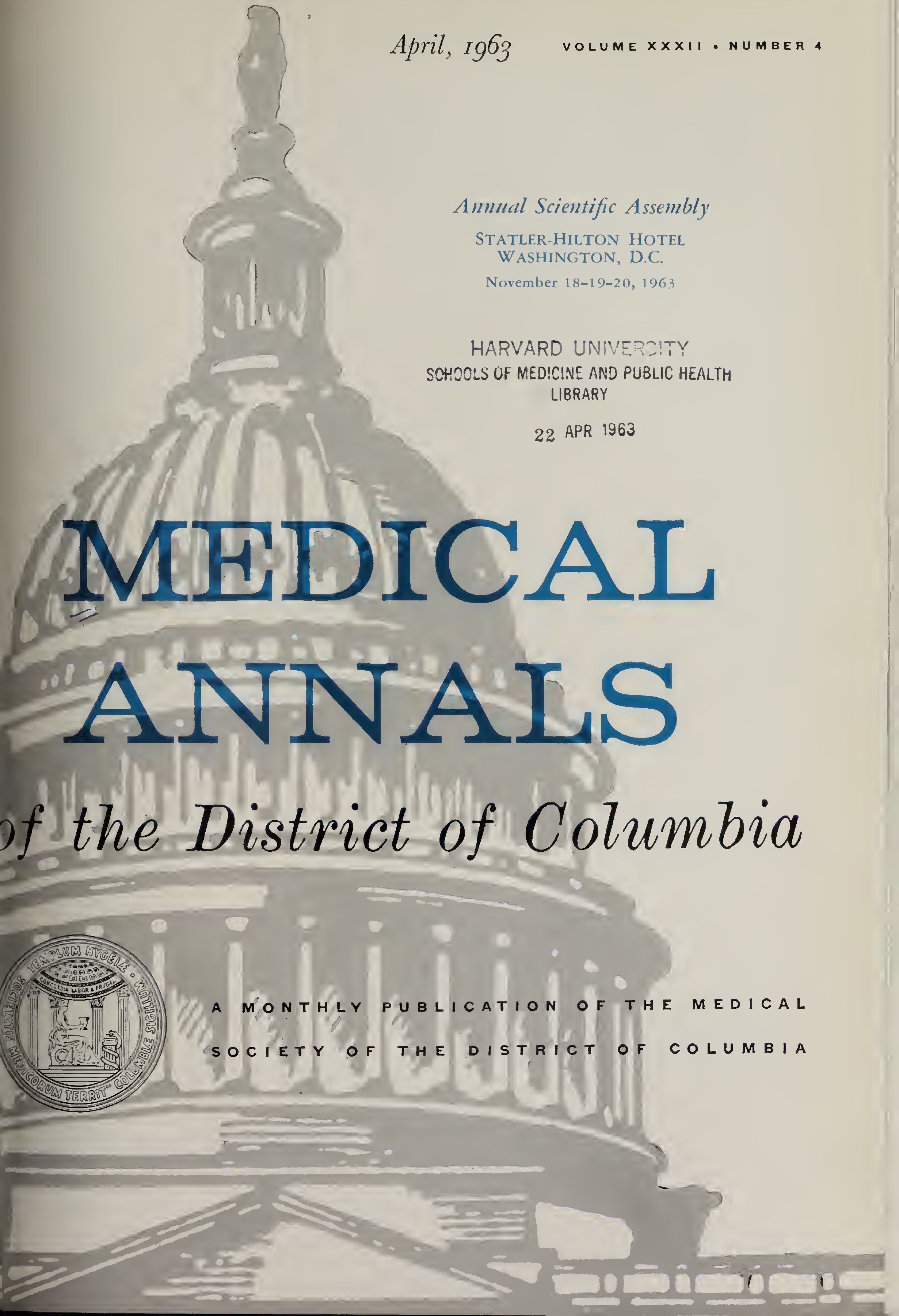

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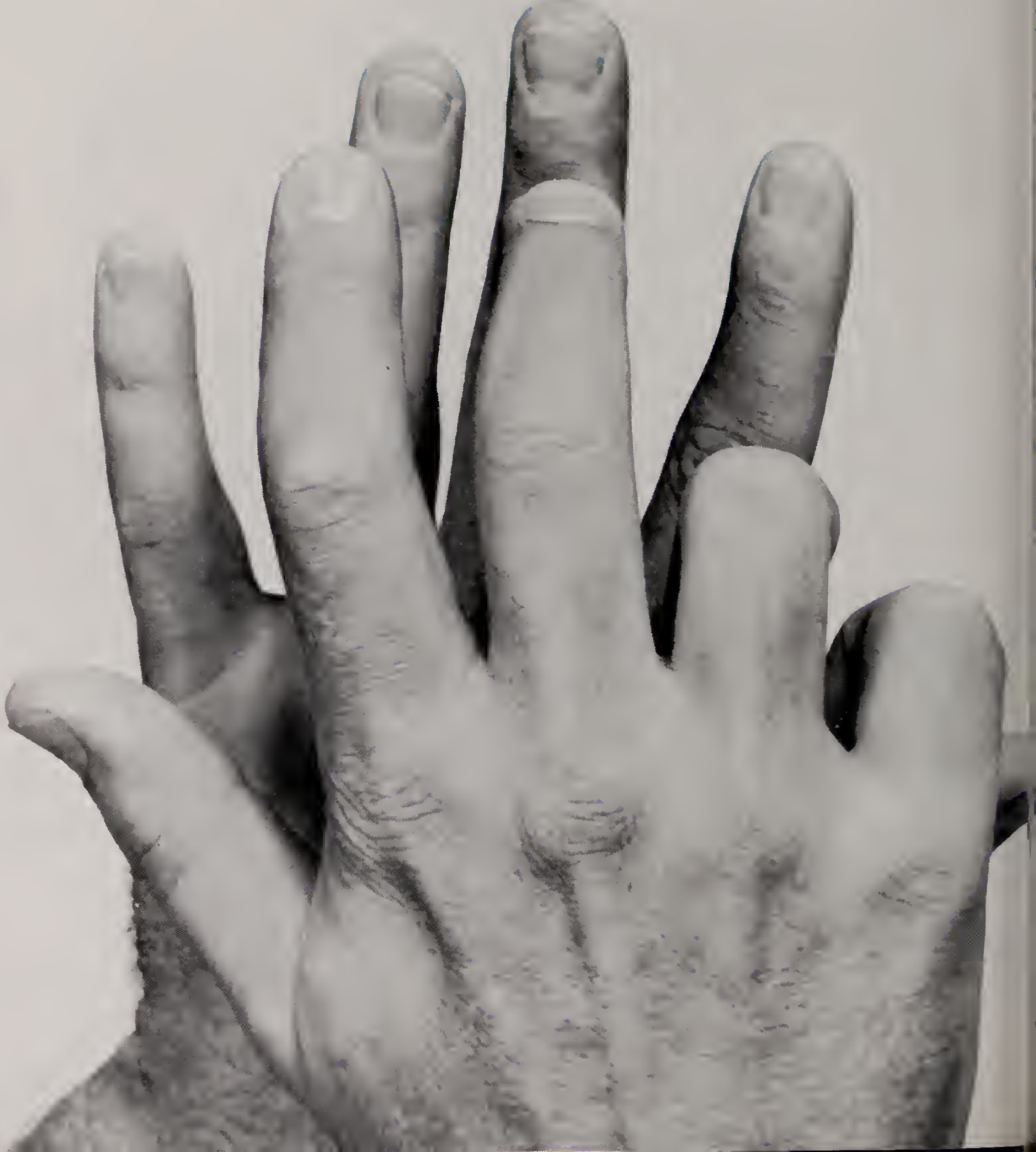

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In Staphylococcal Pneumonia[1-8,13]

CHLOROMYCETIN continues to remain effective against many resistant strains of staphylococci, and—alone or in combination with other antibiotics—should be considered when other antistaphylococcal drugs are ineffective.

In Acute Epiglottitis[4,10,11]

This condition is most often caused by *H. influenzae,* most strains of which are sensitive to CHLOROMYCETIN. Therapy should be instituted at once, since the disease may progress from the first symptoms to a severe respiratory obstruction in four to six hours.

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The infiltrating lesions of staphylococcal empyema are often difficult to eradicate. While CHLOROMYCETIN should only be used when the infection has been resistant to treatment with other antistaphylococcal drugs, therapy with CHLOROMYCETIN, in conjunction with surgical procedures, will often bring favorable results.

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eferences: (1) Thacher, H. C., & Fishman, L.: *J. Maine M. A.* **52**:84, 1961. (2) Hopkins, E. W.: *Postgrad. Med.* **29**:451, 1961. (3) Hall, W. H.: *M. Clin. North America* **43**:191, 1959. (4) Krugman, S.: *Pediat. Clin. North America* **8**:1199, 1961. (5) Ede, S.; avis, G. M., & Holmes, F. H.: *J.A.M.A.* **170**:638, 1959. (6) Wolfsohn, A. W.: *Connecticut Med.* **22**:769, 1958. (7) Calvy, G. L.: *New England J. Med.* **259**:532, 1958. (8) Hendren, W. H., III, & Haggerty, R. J.: *J.A.M.A.* **168**:6, 1958. (9) Cutts, M.: *Rhode Island M. J.* **43**:388, 1960. (10) Berman, W. E., & Holtzman, A. E.: *California Med.* **92**:339, 1960. (11) Vetto, R. R.: *J.A.M.A.* **173**:990, 1960. (12) Sia, C. C. J., & Brainard, S. C.: *Hawaii M. J.* **17**:339, 1958. (13) Rosenthal, I. M.: *GP* **17**:77 (March) 1958. (14) Gaisford, W.: *Brit. M. J.* **1**:230, 1959.

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WE TAKE PLEASURE IN ANNOUNCING

to the members of the Medical Society of the District of Columbia that

LEE FULTON

has been named manager of our Collection Department. Mr. Fulton has had 10 years of experience in collection work. He will be happy to discuss our services with any doctor or medical assistant.

Mr. Fulton succeeds BILL KANE who recently resigned because of ill health. Bill headed the Collection Department for 22 years and is well known to many of you.

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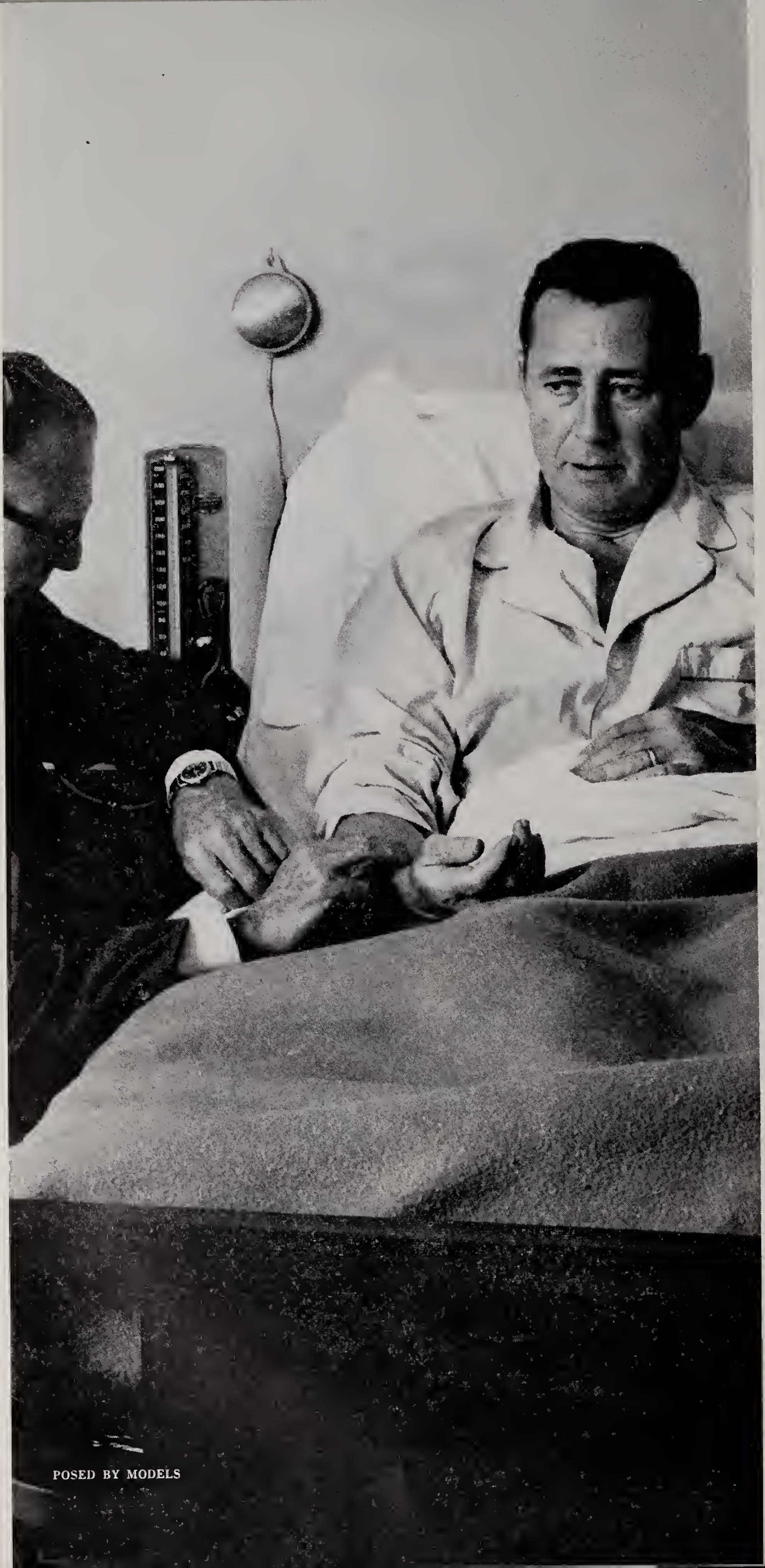

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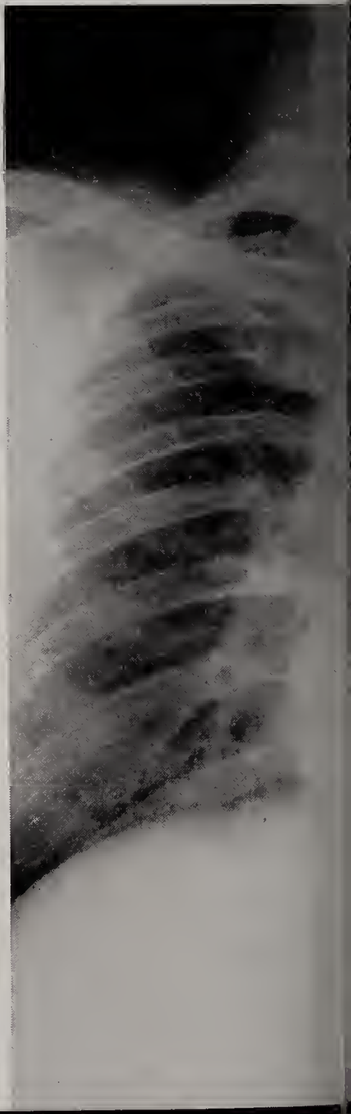

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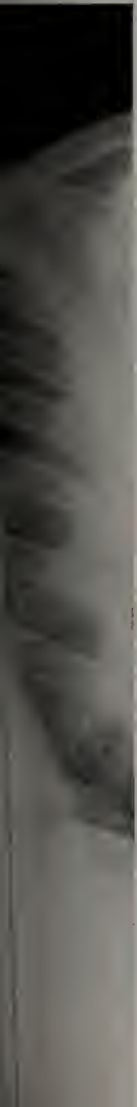

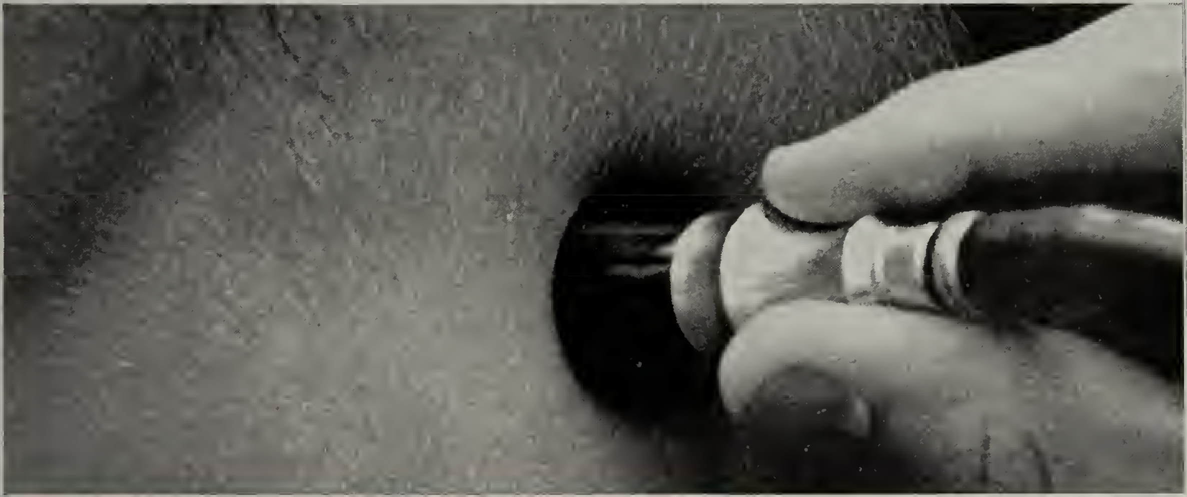

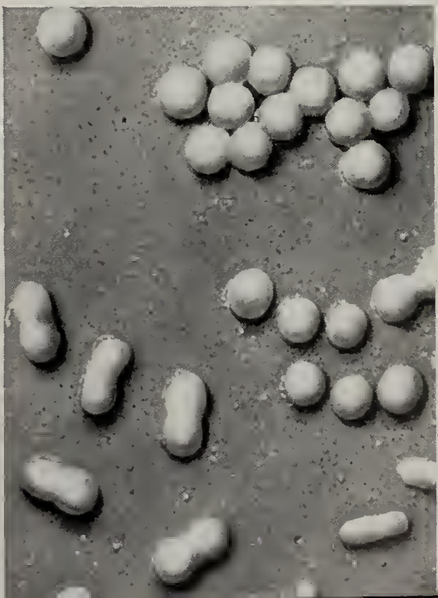

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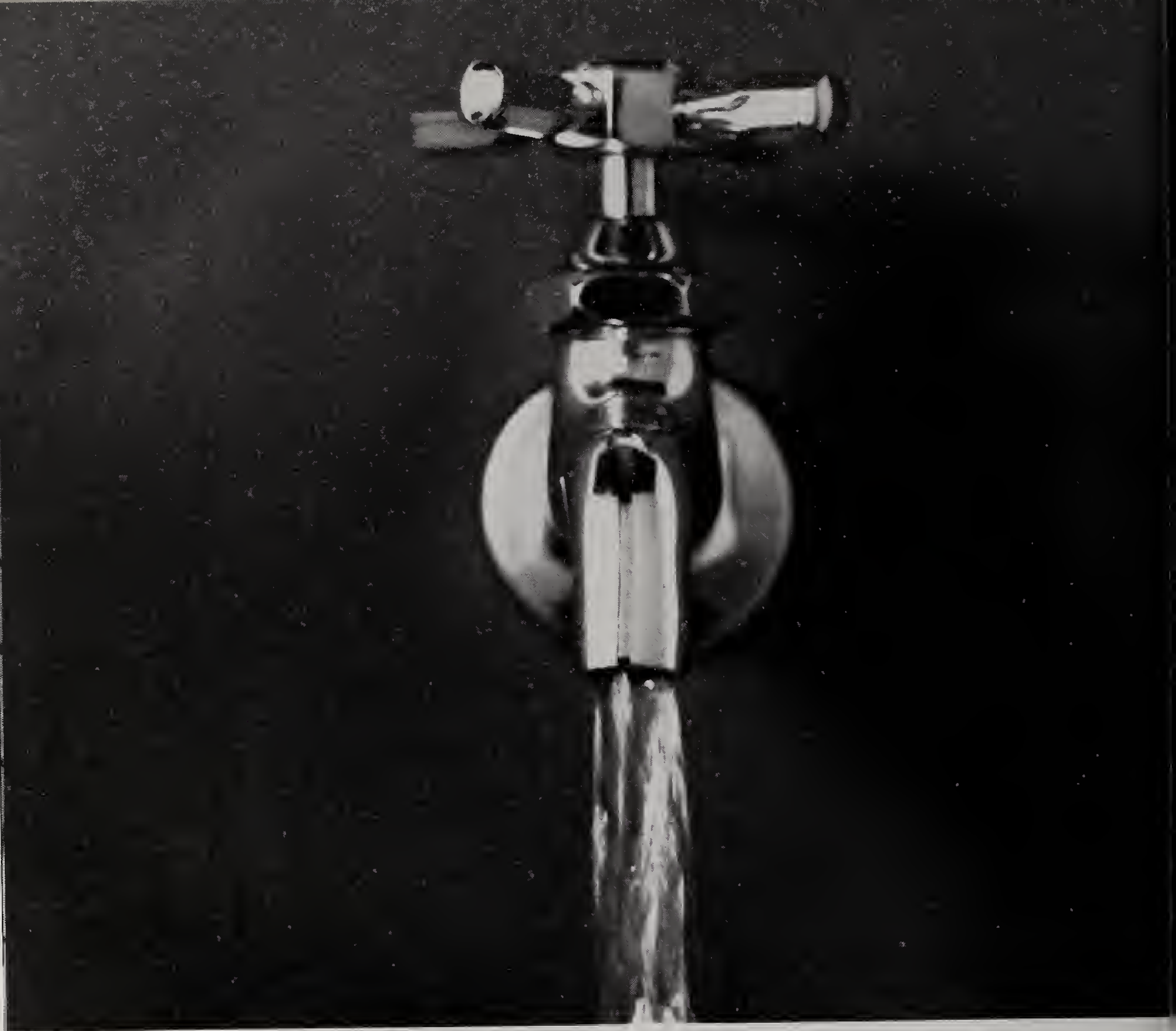

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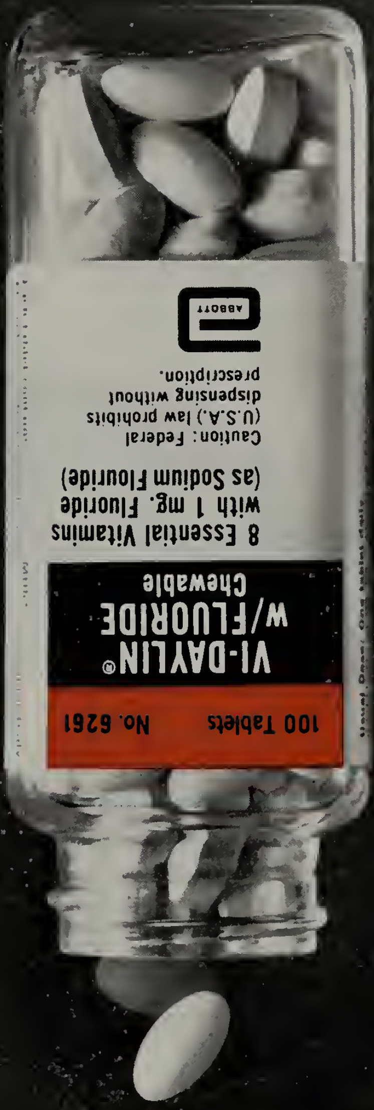

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rescribing Supplements of Dietary Fluorides, Council of Dental Therapeutics, J.A.D.A., 56:591, April, 1958.
luoride Compounds, Accepted Dental Remedies, 27th Ed.:139, 1962.
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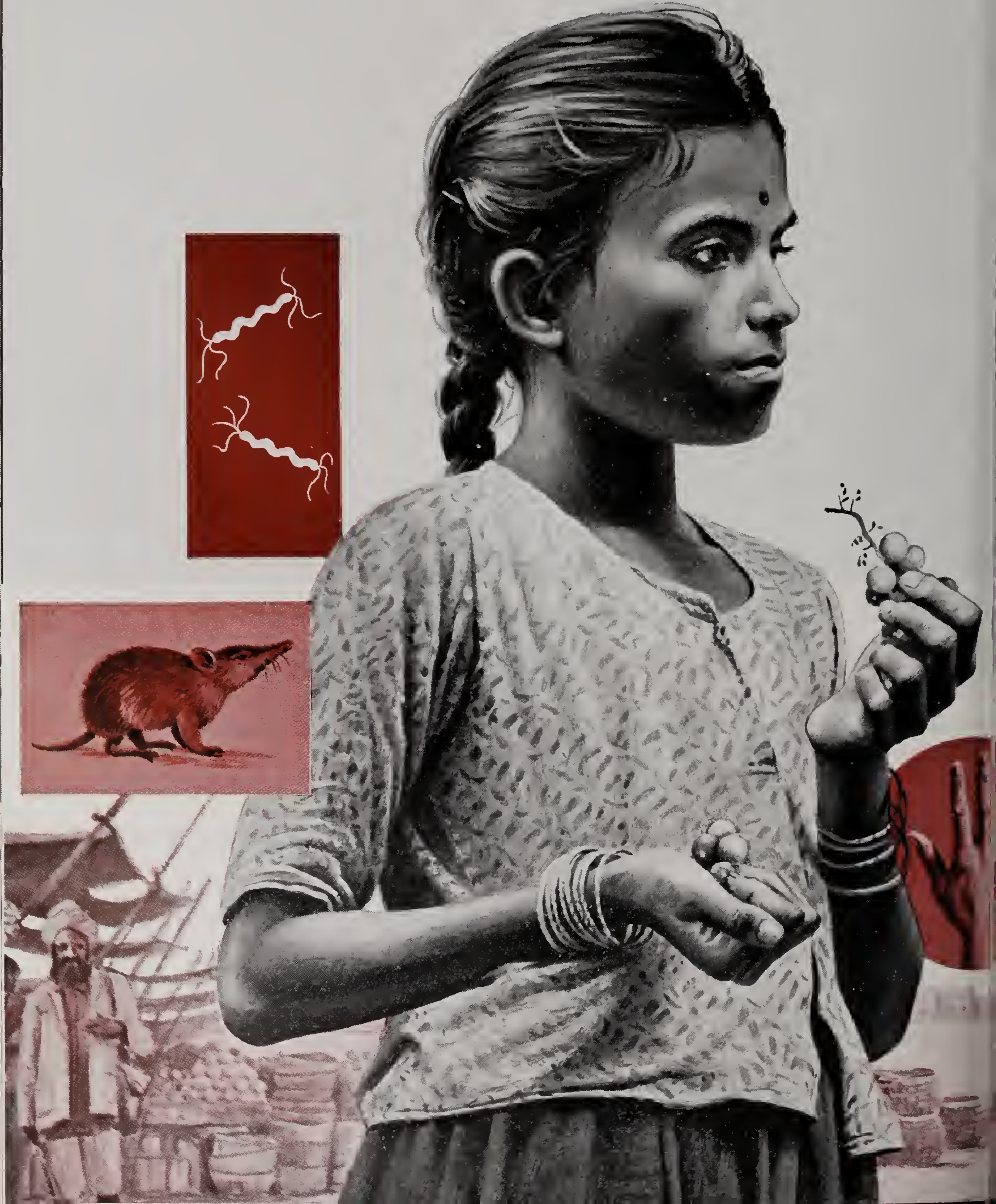

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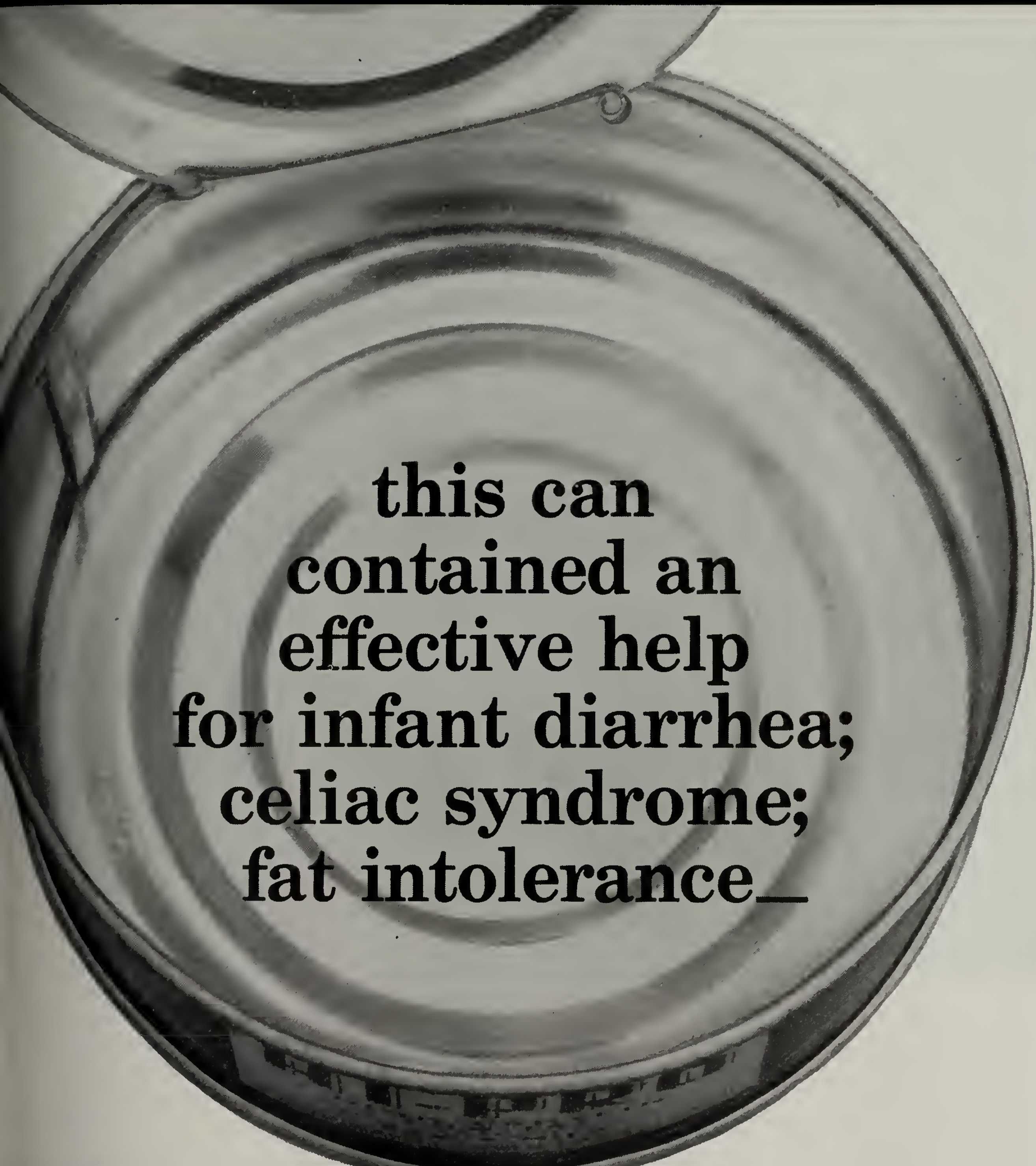

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Poythress, White Section, Page 808 (1963 edition)
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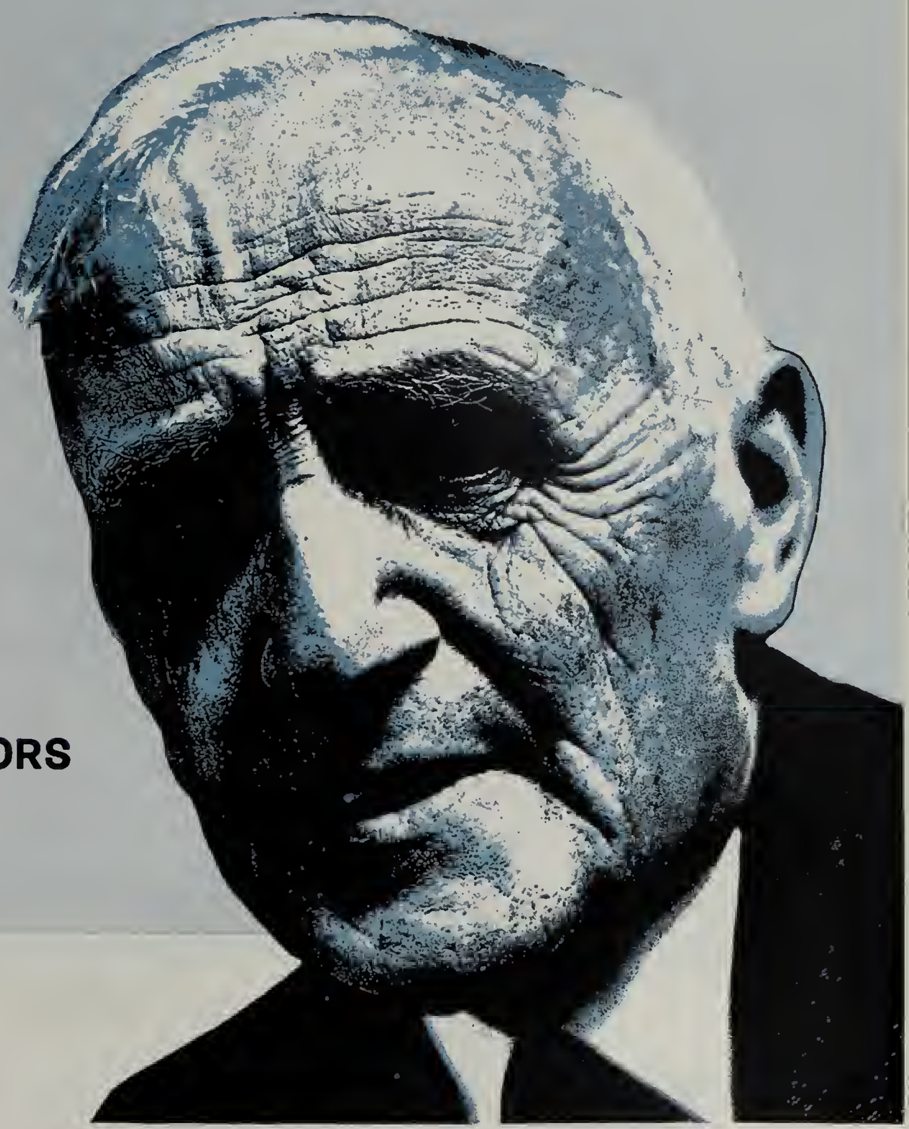

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1. Ford, R. A., and Blanchard, K. P.: J.-Lancet 78:185, 1958.

Precaution: Occasionally, mild salicylism may occur, but this responds readily to dosage adjustment. In the presence of severe renal impairment, care should be taken to avoid accumulation of salicylate and PABA. Supply: Bottles of 100 and 500 enteric-coated tablets.

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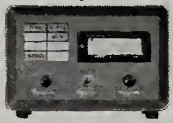

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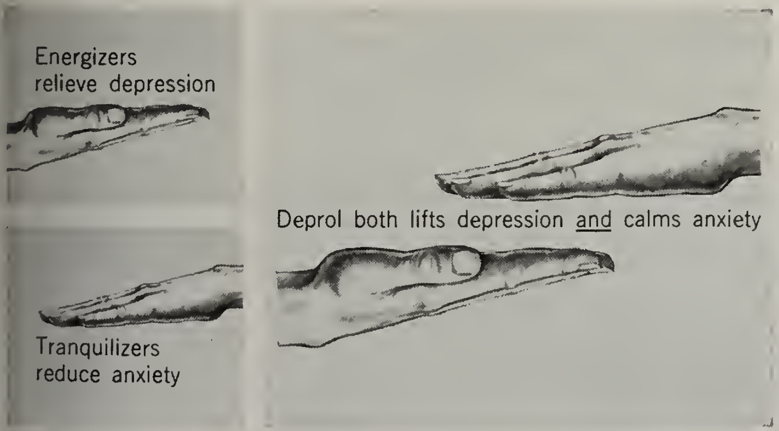
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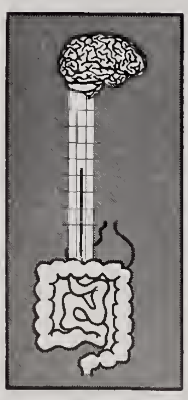
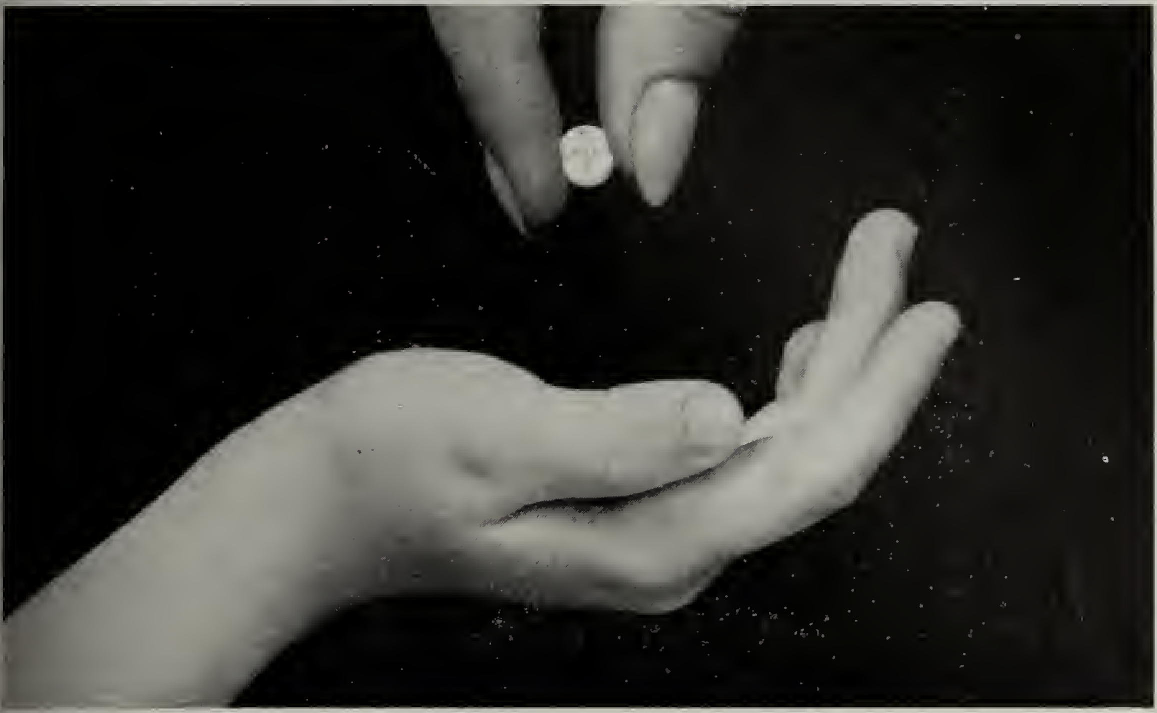


"The G-I tract is the barometer of the mind"



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BOOK REVIEWS

Cancer: Diagnosis, Treatment, and Prognosis, 3rd ed. Lauren V. Ackerman, M.D., and Juan A. del Regato, M.D. Price, $29.50. Pp. 1296, with 779 text illustrations and 4 color reproductions. St. Louis: Mosby, 1962.

This third edition of an excellent authoritative reference and textbook contains major changes and has been extensively revised for the specialist, clinician, pathologist, radiologist and student in a field of medicine which needs teamwork. It gives a clinical presentation of the various differential diagnostic facets, the pathologic differences, and the various approaches to lesions which may be suspected to be cancer. The book provides up-to-date information on the natural life history of the different manifestations of the disease "cancer" with a guide toward earlier utilization of diagnostic means and an understanding of the therapeutic possibilities and the prognosis of a given cancer patient. It also contains an added chapter on cancer research, including coöperative research programs involving large groups. Well written, clear and concise, with color plates, photographs and schematic drawings, the book is outstanding in the elucidation of the subject "Cancer."

William Kurstin, M.D.

Bray's Clinical Laboratory Methods, 6th ed. Revised by John D. Bauer, M.D., Gelson Toro, Ph.D., and Phillip G. Ackermann, Ph.D. Price, $10.50. Pp. 594, with 142 illustrations and 16 color plates. St. Louis: Mosby, 1962.

Dr. W. E. Bray's manual of clinical laboratory procedures is one of several well known works which have been of proven value to clinical pathologists and medical technologists for many years. One of the features of the early editions of this book was the conciseness of the practical information which was set forth by the author. In making this revision the authors have enlarged the size of the book and have considerably enlarged the scope and contents by including new matter pertaining to paper chromatography, human chromosomes, coagulation defects, blood grouping, typing and crossmatching, blood chemistry, microbiology and toxicology.

There is some unevenness in the completeness of the various chapters. The authors could have increased the value of the book if some space had been given to basic information having to do with blood chemistry, such as statistical analysis and pipettes. In view of the importance of flame photometry in the measurement of electrolytes more information concerning the selection of instruments and their operation would have been helpful. It is unfortunate that certain methods which now have little or no value have been included.

The authors have succeeded in producing a book which will be of value to those who are engaged in clinical pathology. Any book which has reached its sixth edition must have a great deal to recommend it.

E. Clarence Rice, M.D.

Age-Grouping Methods in Diptera of Medical Importance with Special Reference to Some Vectors of Malaria. T. S. Detinova. Price, paper, $5.25. Pp. 216, illustrated. Geneva: World Health Organization, 1962.

The text is a substantially revised and expanded version of a series of lectures given by Dr. Detinova during a WHO-sponsored "Course in Advanced Entomological Techniques Applied to Malaria Eradication," held at the London School of Hygiene and Tropical Medicine in 1959. Full accounts of this work have hitherto been available only in the Russian language. The work is a monograph describing the observations of the author about determining the age populations of certain mosquito vectors of malaria. These were accomplished by correlating the changes in anatomical structures, primarily the reproductive systems in females, with the number of blood meals ingested by the mosquitoes. The purpose of these studies was to determine the effectiveness of various control measures in eradicating the vectors of malaria.

This is a highly technical monograph and it is not recommended for general reading. It is undoubtedly of reference value for malariologists and especially for those entomologists interested in the biology of mosquito vectors of malaria.

Edward A. Beeman, M.D.

Textbook of Pathology with Clinical Application, 2nd ed. Stanley L. Robbins, M.D. Price, $19.00. Pp. 1190, illustrated. Philadelphia: Saunders, 1962.

This second edition of a widely accepted and respected textbook of pathology is a most interesting demonstration of the modern dynamic approach to the teaching of pathology. A caution must be voiced to those approaching this volume. Its size (1,190 pages) and weight (almost 8 lbs.) give the physical impression that it is an encyclopedic work, which it is not. Dr. Robbins has written a fine *textbook* which successfully correlates abnormal physiology and altered anatomy, drawing heavily upon both clinical and laboratory correlates as well as upon information developed from the newer research techniques. This method of approach necessarily limits the breadth of coverage of purely anatomic pathology and occasionally results in somewhat uneven discussions of the disease entities being presented.

The author makes every effort to present a wide and logical base of information in his general and systemic pathologic presentations in order to arrive at useful concepts of clinical medicine. He carefully distinguishes between proven pathogenetic processes and theory. There is, however, the everpresent danger that a student reading this text uncritically might read theory for fact, although the distinction is clearly made.

To comment on items with which one might disagree does not detract from the general excellence of

(*Continued on page 26*)

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By Alexander S. Nadas, M.D., F.A.C.P., Assistant Clinical Professor of Pediatrics, Harvard Medical School; Cardiologist, The Children's Hospital; Physician, Sharon Cardiovascular Unit, Children's Medical Center, Boston. About 768 pages, 6⅜″ x 9¾″, with about 529 figures. About $16.00. *New (2nd) Edition—Ready May!*

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In this fully revised *New (2nd) Edition,* chest diseases are presented concisely and understandably to give you thorough step-by-step details of management. Under each disease the authors discuss: *background, incidence, statistical distribution, diagnosis, symptoms, pathology and classification, radiologic appearance, treatment and prognosis.* Important sections cover topics ranging from *bronchial asthma, bacterial and viral pneumonia, etc., to foreign bodies in the larynx and tracheobronchial tree, and coccidioidomycosis.* In this new edition you'll find a completely new section on *Pulmonary Function* and a marked expansion of the material on *Carcinoma of the Lung.* Many new chest films have been added. Chapters on *bronchitis* and *emphysema* are extensively re-written and expanded. The entire book is up-dated throughout.

By H. Corwin Hinshaw, M.D., Ph.D., D.Sc., Clinical Professor of Medicine; and L. Henry Garland, M.B., B.Ch., MD., Clinical Professor of Radiology, University of California School of Medicine, San Francisco. About 800 pages, 7″ x 10″, with about 650 illustrations on 312 figures. About $20.00. *New (2nd) Edition—Ready May!*

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You'll find lucid advice on the problems of *mental retardation, mongolism, club foot, obesity, convulsive seizures, the schizophrenias, harelip and cleft palate, the central nervous system syndrome, disputed paternity, allergies, genetic effects of radiations, heart diseases, skin color, etc.* Illustrative examples show how the information is used in actual practice. They show types of requests for genetic information which have come to the author from agencies, physicians, parents, etc. The reply given to the questioner and the follow-up information obtained later is included.

Major attention is paid to diseases or abnormalities that appear with a frequency of better than one in 1,000 births. The Appendix lists practically all traits that may be transmitted to children. Dr. Reed gives a reference for each one—usually the most recent authoritative article known to him. You'll find listings of such traits as: *adrenal hyperplasia—Dandy-Walker syndrome—pancreatitis—retinal aplasia—Wilms' tumor—etc.*

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By Sheldon C. Reed, Ph.D., Director, Dight Institute for Human Genetics, The University of Minnesota. 278 pages, 5¾″ x 8″. About $5.50.
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Book Reviews

(*Continued from page 24*)

the work. It is somewhat disconcerting to find one therapeutic recommendation advanced to the neglect of others, e.g., radical breast surgery for breast carcinoma without mention of the use of radiation therapy or of the controversy over the McWhorter approach. A tendency toward a too rapid acceptance of early published data is reflected in the statement that the serum leucine aminopeptidase is of value in the diagnosis of pancreatic carcinoma.

The absence of reference to more esoteric items as lobular carcinoma of the breast, chorioangioma, urachal carcinoma, and primary pulmonary hemosiderosis serves to emphasize that this book is essentially a student's text and is not to be compared with the more encyclopedic works of pathology.

Physically, the book is pleasing, although heavy to handle, using the double-column format and a variety of print styles to set off pathologic description from pathogenetic and physiologic commentary. The photographs are generally very good, making excellent use of the lower power photomicrograph. The only real defect in this area is the absence of designations of magnification.

The references are mainly modern, much weeding out of papers having been done. As presented, they serve as a starting point from which to trace the published material on the various disease entities but in no way do the reference lists compare with other standard sources, such as Anderson's "Pathology."

Continuing their contributions are chapters on the nervous system by Dr. J. M. Foley, the oral cavity by Dr. I. Glickman, the liver by Dr. G. K. Mallory, and the skin by Dr. H. Mescon. Dr. Roy Cameron contributes an outstanding chapter on inflammation and repair, and Professor Tom Symington a lucid chapter on the adrenal.

The student should find his "Robbins" a valuable textbook and one which succeeds in placing clinical disease on a sound pathogenetic basis.

Daniel L. Weiss, M.D.

Doctor and Patient and the Law, 4th ed. C. Joseph Stetler, LL.B., LL.M., and Alan R. Moritz, A.M., Sc.D., M.D. Price, $14.75. Pp. 529. St. Louis: Mosby, 1962.

The first three editions (1943, 1949, 1956) of this book were written by Dr. Louis J. Regan, a physician and lawyer, who died in 1955. This edition has been prepared by the General Counsel of the American Medical Association and the Director of the Institute of Pathology of Western Reserve University. Like its predecessors, it is a compendious and authoritative presentation of the many and growing problems of medical practice vis-à-vis the doctor's professional activities, his colleagues, his patients, and the law.

The general headings are: Rights and Duties of Physicians; Rights and Responsibilities—patients and physicians; Medical Testimony; and Medical Professional Liability. There are appendices on professional liability vulnerability; a professional liability prevention program; principles of medical ethics of the AMA; and model constitution and by-laws for a medical society. There are also a list of cases cited and a full index. Each chapter is followed by an extensive list of references, legal and other.

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Ciba Foundation Symposium on Tumour Viruses of Murine Origin. G. E. W. Wolstenholme, O.B.E., M.A., M.B., M.R.C.P., and Maeve O'Connor, B.A., Editors for the Ciba Foundation. Price, $10.75. Pp. 441, with 72 illustrations. Boston: Little, 1962.

This book is a collection of papers and discussions concerning tumor-producing viruses of rodent origin. The Ciba Foundation sponsored this Symposium, which was held at Perugia, Italy in 1961 and was attended by 27 eminent virologists, several of whom were from the National Institutes of Health.

The morphology, culture, transmission and recovery, antigen-antibody reaction and various cancers produced were some of the problems presented. Specific viruses about which most is known, i.e., mouse leukemia virus, mouse mammary tumor viruses, and the polyoma virus which is similar to the wart virus of man, are discussed at length. The ecology of the polyoma virus on farms in Montgomery County, Maryland was presented by Huebner et al of the National Institutes of Health.

Except for the final discussion, where an attempt is made to extrapolate the knowledge gained from cancer production in mice to cancer in man, I believe this book is too esoterical and technical to interest many physicians.

Gregory T. Henesy, M.D.

NEW AND FORTHCOMING BOOKS

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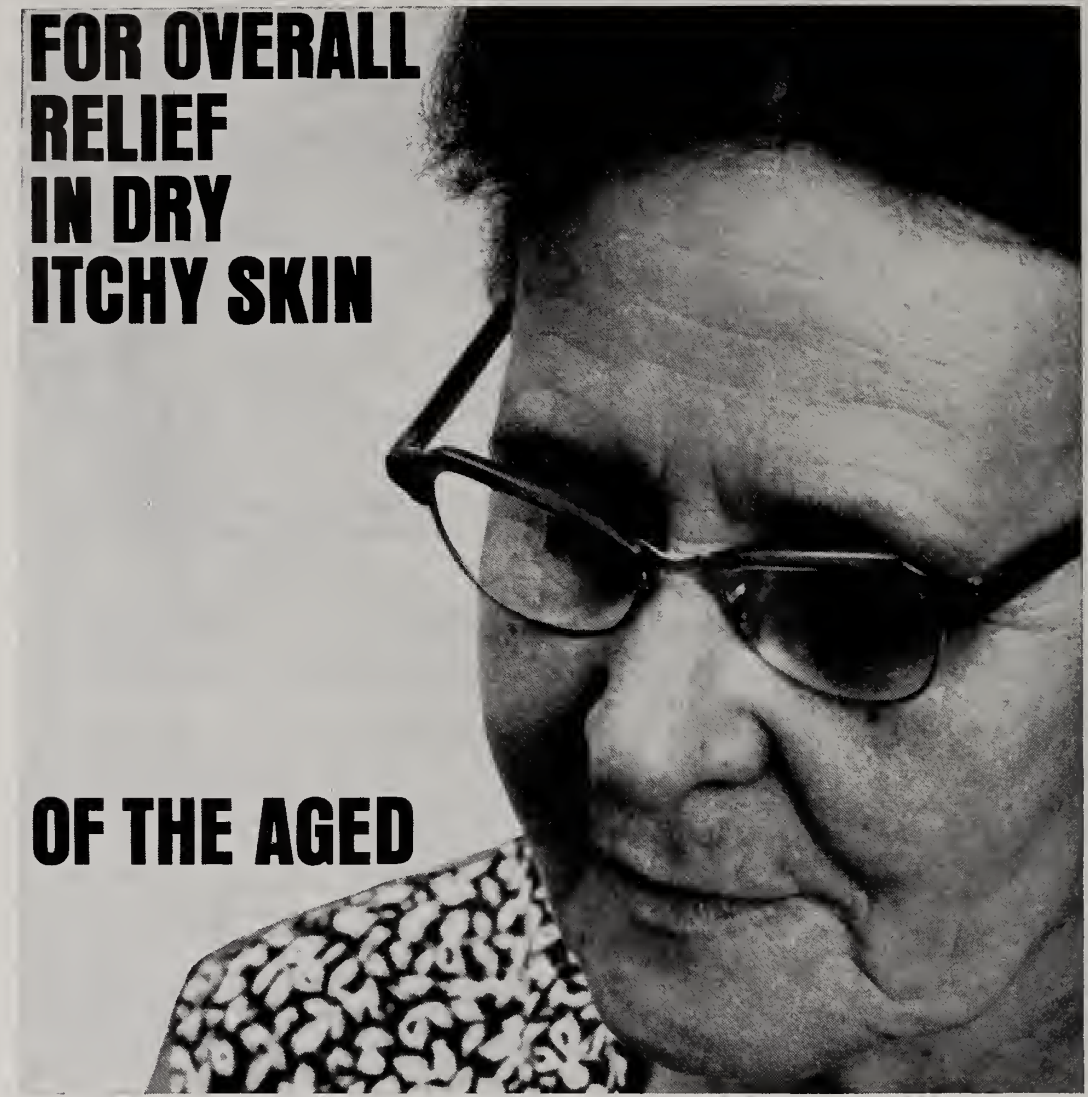

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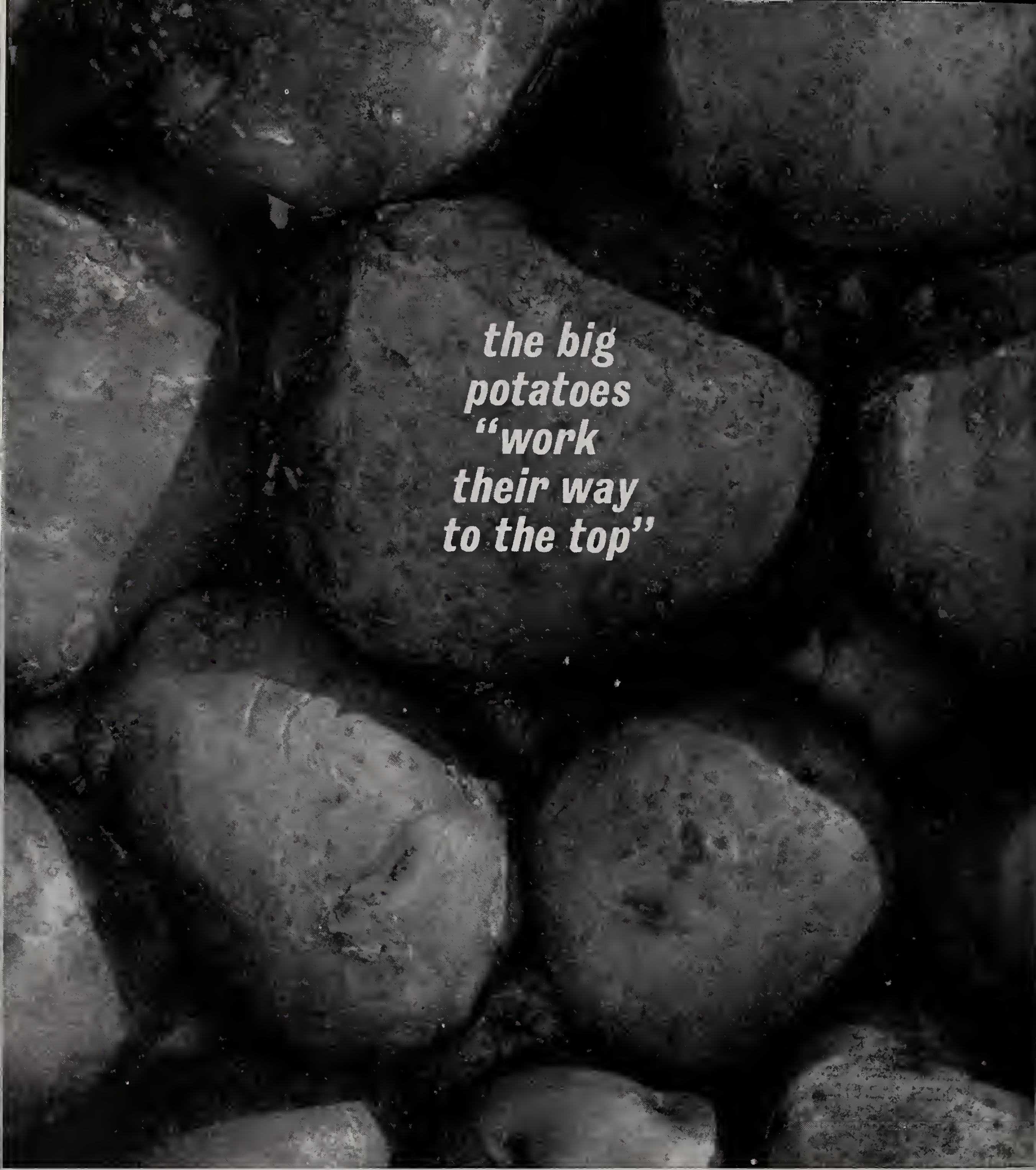

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MEDICAL ANNALS

of the District of Columbia

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Fluoridation: A Classic Case of Disease Prevention*

GERALD D. TIMMONS, D.D.S.

President, American Dental Association; Dean, Temple University School of Dentistry

FOR MORE THAN A DECADE the communities of the United States have had the opportunity to give their citizens lifelong protection against a universal, costly, painful and disfiguring disease, dental caries.

The extent of dental caries is such as to classify it as a national health problem. For all practical purposes it can be literally termed a universal affliction. Indeed, over 80 million man-hours a year are lost because of dental caries and related diseases. By the time a person graduates from high school one-third of his teeth have been attacked by decay.

A solution to this problem is complicated by the generally undramatic nature of dental caries and by the widespread misunderstandings about the seriousness of the diseases of the gums and tooth-supporting bone structure that arise from dental neglect. Because of such reasons the dental profession long searched for public health measures that would be substantial adjuncts to office care.

That search was rewarded some time ago by discovery of one of the most useful scientific discoveries of our time, fluoridation. Fluoridation, of course, cannot eradicate all dental ills. Nor can it eliminate the necessity for such additional dental health practices as a balanced diet, proper and regular brushing, and periodic visits to the family dentist.

What fluoridation has done, however, is to give the public a safe and inexpensive method of protecting teeth and reducing decay by as much as 65 per cent. The method is one of classic simplicity: making sure that fluoride is present in the community water supply in a ratio of about 1 part for every 1,000,000 parts water. In some water supplies this proportion is naturally present. In most, the natural fluoride content must be supplemented to some extent.

The story of fluoridation began in 1902 in Colorado Springs, Colorado, when Dr. Frederick McKay, practicing there, observed a condition now referred to as "mottled" teeth. Dr. McKay's work in searching for the cause of mottled enamel attracted national attention. Improved chemical testing methods in research uncovered a relationship between fluorides in the water supply and dental caries. The excessive fluoride content of Colorado Springs' water had caused the mottling of teeth but at the same time had reduced tooth decay.

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* EDITOR'S NOTE: Dr. A. Harry Ostrow, Chief of the Bureau of Dental Health, D. C. Department of Public Health, in a report to the District of Columbia Dental Society's 31st Postgraduate Clinic, March 11, gave statistics on tooth decay among Washington area school children for the 10-year period following June, 1952, when the addition of sodium silicofluoride to the water supply was begun. In the 1951–52 school year 10.7 per cent of all 6-year-old children in the District's schools were found to have 1 or more decayed permanent teeth. In 1961–62 only 3.2 per cent of the same age group had decayed teeth.

In releasing statistics the changing school population was also taken into consideration since Negro children generally have less than half as many decayed, filled and missing permanent teeth as white children. After weighting statistics to eliminate this racial difference, the percentage reduction of tooth decay among 6-year-olds in public and private schools was 59.1 per cent. With each added year in age, the reductions were less, e.g., 9-year-olds, 45.3 per cent; 11-year-olds, 30.5 per cent; and students over 16, 12.8 per cent reduction during the 10-year period.

Parts of Montgomery, Prince Georges, and Fairfax Counties, and all of Arlington County and Alexandria have the same fluoridated water supplies as the District of Columbia. The cost of fluoridation has been about 8 cents per person per year.

This discovery naturally led to experimenting with levels of fluoride that would reduce decay without causing disfigurement. By 1950 the proper ratio had been determined and the public and private health organizations of the nation began to urge adoption of fluoridation. Evidence since that time has mounted massively and has supported fluoridation as being both safe and effective.

Studies made in Colorado Springs and neighboring Boulder, which is fluoride-deficient, show that among adults who have had lifetime exposure to fluoridated water there was about 60 per cent less dental caries experience. The number of missing teeth per adult was likewise impressively lower in Colorado Springs. This study, and others like it, show the fallaciousness of the claim that water fluoridation benefits children only. It is accurate to say that fluoridation is truly effective only if the fluoride is ingested during the early years of life. However, the benefits gained during childhood continue through adult life, and thus, in time, the elderly as well as the young are beneficiaries.

Other extensive studies have repeatedly demonstrated that there are no harmful side-effects, either dental or medical. This has held even for areas where the natural amount present was as much as 8 times greater than the recommended ratio.

Today, nearly 2,200 communities, with a total population of almost 43 million, are fluoridating. Another 7 million Americans live in the more than 1,900 communities where the water has an acceptable natural level.

Two-thirds of all major metropolitan areas have fluoridated water, including Chicago, Philadelphia, Baltimore, St. Louis, Houston, San Francisco, and Washington, D. C. The cities of Detroit and Toronto approved the health measure late in 1962 and will soon implement it. By sorry contrast only 17 per cent of the smaller communities, those with populations of 2,500 to 10,000, have fluoridation programs.

In areas where fluoridation has not yet begun, parents, while working for its acceptance, can act to bring some of fluoridation's benefits to their children through topical application of fluoride by a dentist. The results of clinical tests of this preventive measure have shown that optimum results of up to 40 per cent reduction in the incidence of dental caries can be attained. Topical application, however, is neither as effective, as convenient, nor as economical as water fluoridation.

Ingesting fluoride tablets daily can also have some beneficial effect, but only if it is done with rigid regularity from birth until nearly the teens. It is essential, of course, that such fluoride supplements should be taken precisely as prescribed.

Despite the certainty of fluoridation's benefits, more than 18,000 communities with more than 40 million children are still denied its protection.

A small but vociferous band of individuals who refuse to accept the scientific facts is responsible for delaying the acceptance of community water fluoridation in many areas.

Indeed, the disturbing result of anti-fluoridationist action is that 4 out of 5 community referenda on fluoridation in the past 2 years were lost. The propaganda devices often used are distortions of facts, loud repetitions of lies, predictions of groundless but nonetheless frightening effects of fluoridation, and, when all else has failed, the sly insinuation, "Wouldn't it be better to wait and be sure than perhaps see your children crippled?"

There is a minute number of physicians and dentists still opposed, often on political grounds. There are health food faddists and pamphleteers who hope to profit from their campaigns. There are the pitiable hatemongers who call fluoridation a Communist plot to weaken the minds of Americans—the kind of charge that reflects more on the accuser than the accused. Finally, there are those who sincerely argue against fluoridation on religious and constitutional grounds. We must respect the honesty of the last group while at the same time pointing out that they have had their day in court on repeated occasions and have never won.

In 1960 the University of Michigan's Schools of Public Health published a comprehensive list of 150 objections to fluoridation and analyzed and disproved all of them. The list included 110 diseases or conditions purportedly caused in human beings or animals by fluorides. The ailments included heart disease, cancer, leukemia, tuberculosis, multiple sclerosis, liver disease, arthritis and malocclusion. The survey noted that in no case could fluoridation be considered, even remotely, as a contributing cause of disease.

Disfiguring mottling of the teeth, the report noted, has happened in communities where water naturally contains grossly excessive fluoride. It doesn't happen when the fluoride content is controlled, as it is in all fluoridation programs, at 0.7 to 1.2 parts per million.

Every reputable scientific organization having competence in the health field has given unqualified approval to fluoridation. Among these are the American Medical Association, the World Health Organization, the American Pharmaceutical Association, the Public Health Service of the United States Department of Health, Education, and Welfare, and, of course, the American Dental Association. Such civic organizations as the Junior Chamber of Commerce, the Parent-Teachers Association, and the American Legion have long lent their support to the cause of fluoridation, as has the AFL-CIO.

In addition, many prominent Americans have publicly endorsed fluoridation men such as Dwight D. Eisenhower, Attorney General Robert F. Kennedy, U. S. Undersecretary Ralph Bunche, Dr. Benjamin Spock, and Dr. Paul Dudley White. And in January of 1963 President Kennedy issued a statement in which he strongly urged "parents, dentists and health organizations to renew their efforts . . . to improve the dental health of the Nation's children . . . by advocating such preventive measures as fluoridation of public water supplies."

New York City is one of the few remaining metropolitan areas not fluoridating. Because of its prominence, a team of health leaders went there in January to confer with Mayor Robert Wagner. The team included Surgeon General Luther L. Terry, Dr. George Fister, President of the American Medical Association, and myself. At the last minute, despite his assurances, Mayor Wagner decided not to meet with this group. *The New York Times* commented on his action in an editorial entitled "A Strong Mayor's Closed Door." It said: "The Mayor's door was closed and probably his mind too . . . Mayor Wagner was for fluoridation back in 1956. Time and again his Health Department has backed it and so have the State Health Department and the United States Public Health Service. But now the Mayor just wants it to stay away from his closed door." A New York news commentator, discussing Mayor Wagner's attitude, ended by saying that "Now our kids will have cavities because our elders have neuroses."

This New York visit symbolizes the fact that the American Dental Association in coöperation with the United States Public Health Service has recently begun to intensify its efforts on behalf of fluoridation.

A campaign manual to guide local workers has been produced. Articles for newspaper publication, films, recordings, and radio scripts also form part of this stepped-up campaign. In selected areas it is hoped that experts will be able to come and help in person.

The American people have too much common sense to be fooled much longer by the antifluoridationists. But every day that passes works against the dental health of millions of our Nation's children, and it is this fact that lends such urgency to the efforts of the dental profession.

Ever since our efforts began we have been firmly supported by the physicians of the Nation. It is support for which we are grateful. A continuance of this active, interprofessional coöperation will speed the day when every child will have the kind of dental health protection to which he is entitled.

A Nomogram for the Bedside Estimation of the Mean Systemic Arterial Blood Pressure*

JOHN B. JOHNSON, M.D., F.A.C.P.
Professor of Medicine, Howard University College of Medicine
ELOISE WIGGINS TAYLOR, M.S.
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THE NEWER THERAPEUTIC AGENTS for hypertensive vascular disease have been remarkably successful because of their physiologic effect in reducing peripheral arterial resistance. This resistance, produced largely in the arteriolar bed, is a function of blood flow (cardiac output) and pressure. Resistance is directly proportional to the driving pressure (mean pressure) and inversely proportional to the blood flow as expressed in the equation: $R = \bar{P}/F$.

Circulatory physiologists no doubt would agree that when no remedial cause is found, the physician might best think of effective treatment of the hypertensive patient in terms of reducing peripheral resistance. This way of thinking is not usual in clinical practice because of the lack of simple bedside methods for estimating the cardiac output and the systemic arterial mean pressure.

In patients with uncomplicated essential hypertension or with the accelerated form of hypertension and cardiac output has been found to be normal.[1, 2, 3] Thus, in these patients the systemic arterial mean pressure provides an important clinical index, varying directly with the peripheral arterial resistance. The arterial blood pressure is commonly thought of as 2 points, systolic and diastolic. Actually the arterial blood pressure is constantly changing during the cardiac cycle, reaching its maximum at peak-systole and its minimum at end-diastole. Systole constitutes only about one-third of the cardiac cycle, the remaining two-thirds of the cycle representing diastole. Thus the pressure during diastole is exerting its influence on the walls of the arteries twice as long as that of systole.

The mean arterial pressure is the pressure which would be exerting its influence on the arterial wall during the entire cardiac cycle if the blood flow and pressure were steady and not pulsating. Thus, as a single value, the mean pressure combines the pressure effects of systole and diastole on the arterial wall.

An office or bedside estimation of the mean pressure is given by the formula: Mean Pressure $= (S + 2D)/3$, where S and D are systolic and diastolic pressure readings respectively, obtained with the ordinary sphygmomanometer.

In handling a large number of patients with uncomplicated hypertension in a private office, in a medical ward, or in a clinic for the treatment of hypertension the arithmetical estimation of the mean pressures is so time-consuming that it is done infrequently. As a result, the important concept of decreasing systemic peripheral arterial resistance is inadvertently lost to the physician in clinical practice. We have made use of the principle of alignment charts in developing a nomogram which permits the rapid estimation of the systemic arterial mean pressure after the systolic and diastolic pressures are measured with the sphygmomanometer. The nomogram is a simple mathematical tool for the pictorial representation of the relationship between 2 or more variables.†

The nomogram shown in figure 1 has as the 3 variables the systolic and diastolic pressure measurements and the mean blood pressure all expressed in mm. Hg. Using this graphic chart the nurse or physician may read off the mean blood pressure directly after having obtained the systolic and diastolic pressures with the sphygmomanometer. The mean pressure thus obtained has the advantage that one can think of the blood pressure in terms of a single figure, and, in addition, this value represents an index to the magnitude and course of the systemic arterial resistance prior to and following effective therapy.

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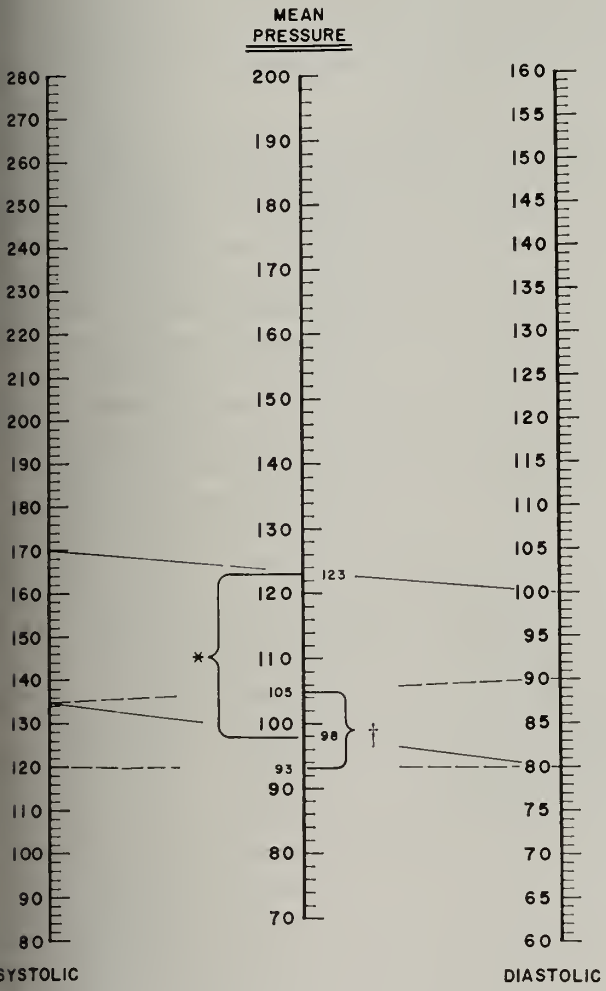
† Principles utilized in the construction of nomograms may be obtained from textbooks on this subject.[4, 5]



* Using normal blood pressure standards, mean range 98–123 mm. Hg (ages 16–65 yrs.) (135/80–170/100).

† Using normal blood pressure standards, mean range 93–105 mm. Hg (ages 16–65 yrs.) (120/80–135/90).

FIG. 1. Mean systemic arterial blood pressure mm. Hg nomogram.

Some of these features are well illustrated by the blood pressure levels of 4 patients, seen in a physician's office, with systolic and diastolic blood pressures, as recorded in table 1. The estimated mean systemic arterial pressure for each of the patients is presented in the second column and the index of peripheral resistance, as a per cent of normal, in column 3. If the circulation in these patients is not complicated by heart failure the peripheral resistance will be normal in the normotensive subject (patient 1); it will be 38 per cent, 38 per cent, and 108 per cent above normal in patients 2, 3, and 4.

TABLE 1: Blood Pressure Levels of Four Patients

Patient	Blood Pressure in mm. Hg		Peripheral Resistance Index Per cent above normal
	Systolic/ Diastolic	Mean	
1	120/80	95	Normal
2	175/105	128	38
3	195/95	128	38
4	255/170	198	108

Summary

In the absence of remedial cause the effective clinical management of hypertension is dependent on a reduction of peripheral arterial resistance. In the absence of heart failure the mean systemic arterial pressure provides a good index to the magnitude and therapeutic alterations of peripheral arterial resistance in the hypertensive patient.

A nomogram in the form of a simple graphic chart has been presented by which the mean arterial blood pressure may be determined in the office or at the bedside after the systolic and diastolic pressures have been obtained with the sphygmomanometer.

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The Treatment of Inoperable Prostatic Cancer

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THIS PAPER is submitted with the idea of presenting the many currently available modalities in the management of inoperable cancer of the prostate.

Since the institution of the administration of estrogenic or estrogenic-like substances and castration in 1941 we have added to these methods of management adrenalectomy and hypophysectomy. These are all so-called endocrine types of treatment. In addition, we have certain chemotherapeutic methods of treatment including the administration of the antiphlogistic steroids, nitrogen mustard, Thio-Tepa®, Krebiozen, and any so-called anticancer chemical agent.

The optimal way of managing a case of inoperable cancer of the prostate begins with a decision whether and when therapy should be instituted. Since prostatic cancer has such a variable course it seems reasonable to delay the institution of any type of endocrine modification therapy until one or both of two conditions are present. The main justification for this policy is that patients with prostatic cancer have been known to continue functioning satisfactorily for 10 years or more without treatment of any kind.

The first of the conditions which requires therapy is the pain from metastasis. The second is an unsatisfactory general physical trend. There are instances in which extensive metastasis may be present in the bones and elsewhere with no appreciable physical incapacity. When one or both of these conditions are present one may castrate or administer estrogens with the idea of controlling the trend of the malignancy. If estrogens, stilbestrol, or TACE® are selected, the smallest effective dose of any of these agents is the proper one to use. Stilbestrol is usually started with a dose of 1 mg. daily. Estradiol dipropionate may be given by injection in the same dosage. TACE may be given at the rate of 1 capsule a day and the other estrogenic-like substances in proportional dosages. As long as this dose proves effective it should be continued. When and if it becomes ineffective the dose should be increased until effective, if this is possible.

If the patient was started on estrogens, castration should be urged. When and if the effectiveness of castration or estrogens, or both, has been lost, any of the antiphlogistic steroids may be administered in the smallest effective dose, if effective. When and if this type of therapy loses its effectiveness, bilateral adrenalectomy may be discussed and should be presented in the following manner. The patient should be informed that there is a 20 per cent chance of favorable clinical response to this type of procedure. If, under those circumstances, he wishes to have it done, it should be done.

The surgical removal of the pituitary sometimes is effective. It is my opinion and that of most authorities that if previous endocrine therapy has been effective the removal or destruction of the pituitary will also have a good chance of being effective.

There are different means of attacking the pituitary besides direct surgical removal. These include the insertion of radon seeds or yttrium, and utilization of the betatron, which, if available, will completely destroy the pituitary. Ordinary X-radiation with doses of 5,000 roentgens is appreciably effective even though it may not completely destroy the pituitary. Whenever bilateral adrenalectomy or destruction or removal of the pituitary is carried out, substitution therapy must be provided. In the case of bilateral adrenalectomy, from 25 to 50 mg. of cortisone or comparable steroids usually will prove effective. In the case of the pituitary, the administration of cortisone in doses of 25 mg. or comparable steroid, thyroid extract, and posterior pituitary extract is necessary. The administration of radioactive phosphorus, which was originally used as a diagnostic method of localization of osseous metastasis, has been found effective in pain relief in some instances, and there should be no hesitancy in utilizing this material therapeutically.

The radiologic destruction of the testis and direct radiation of the prostate are perfectly reasonable in selected cases; because of certain circumstances the patient might prefer to have this type of therapy.

In patients in whom the local mass of cancer is not unusually large, the injection of radioactive gold as described by Flocks is currently proving to be spectacularly effective in reducing the size of the local mass and controlling the local malignant area, many times completely. Although the injection of radioactive gold is therapeutically, and in certain hands, probably more satisfactory than other types of radiation therapy, the insertion of radium needles or radon seeds has proved more than moderately pleasing in properly selected cases.

A procedure in which the circulation of the prostate is surgically isolated so that chemotherapeutic agents such as Thio-Tepa may be employed in concentration not permissible in the general circulation is rarely employed.

X-ray treatment wherever osseous pain is experienced is a very useful means of controlling pain in many instances. The dosage should be analgesic and not therapeutic. There are times when cervical cordotomy is a permissible procedure, where pain in the lower back and lower extremities is demanding more than moderate narcotic administration. Prefrontal lobotomy is a very questionable procedure, and one to be used under the most unusual circumstances, when everyone concerned seems to agree that it is permissible or advisable.

Krebiozen, which has been under very severe criticism in certain quarters, will sometimes prove valuable in relieving pain; in an instance that I know of, it was successful in allowing a local physician, who was bedridden and had become endocrine irresponsive, to return to his office for a full month before eventual demise.

Along with these various methods of management one should be very vigorous in all general supportive measures. The administration of therapeutic vitamins and of blood when the blood level falls below a satisfactory one from time to time is especially valuable in maintaining individuals in satisfactory general physical condition.

There are rare instances in which removal of the malignant prostate, vesicles and bladder en masse, followed by ureterointestinal anastomosis, may be carried out. This type of procedure, of course, is not done with any idea of offering a cure, and in my opinion only at the request of the patient, his physician and family.

The following facts are of historic interest for anyone who wishes to take the time to read about them. In this country from 1893 to 1905 White of Philadelphia treated benign prostatic obstruction by castration with favorable clinical response in about 85 per cent of the cases. During this same period the British were carrying out bilateral oöphorectomy for cancer of the breast in women. Since surgical mortality for this procedure was 6 per cent at that time and only 1 in 99 was considered a cure, the procedure was discontinued. In this country Dr. Hugh Young assisted in making castration unpopular as the procedure of choice as the result of his skillful perineal prostatectomy technique. In 1940 I injected 1 mg. of estradiol dipropionate for a greatly advanced, inoperable, almost moribund patient with prostatic cancer. The response to this injection was so spectacular that the eventual estrogenic form of treatment with stilbestrol and other estrogenic substances was developed. In 1941 Huggins reported the institution of castration for inoperable prostatic cancer. Later on Huggins was the first to perform bilateral adrenalectomy as a form of therapy for this disease. I recommended pituitary radiation in 1942; this type of therapy has been modified technically in many ways. Both Dr. Hugh Young and Dr. Alexander Randall performed castration before 1940 on patients with inoperable cancer in the hope that it might prove beneficial. Unfortunately, in neither case did the patient experience a satisfactory clinical response.

At the present time it is a generally accepted theory that the androgen-estrogen balance determines the biologic activity of prostatic cancer. In view of what appear to be paradoxical clinical phenomena insofar as androgen-estrogen balances are concerned, it would seem that this theory does not completely explain biologic behavior of prostatic cancer. It is possible that further knowledge of the enzymatic patterns of individual cells may eventually provide the key.

Prostatic cancer may be responsive or nonresponsive to endocrine variations. If an individual prostatic cancer is responsive, it will be so at any stage, and most spectacularly so in the most advanced stages. This seems to be a reasonable basis for withholding endocrine management as previously recommended in this paper.

It is a fact that the earlier cancer of the prostate is recognized, which can only be done in the early stages by biopsy, the better the outlook for the patient. For this reason, every physical examina-

(*Continued on page 158*)

A Ten-year Survey of Dilation and Curettage Complicated by Uterine Perforation*

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PERFORATION OF THE UTERUS during dilation of the cervix and curettage of the endometrium may be an etiologic factor in the production of infertility. There are also other complications of this common procedure that may influence fertility, such as incompetent cervical os, cervical stenosis, and uterine atresia.[1]

Uterine curettage is one of the most frequent surgical procedures performed. It is both a safe and rational method for diagnosis and therapy. Although the operation is always considered a minor procedure, it should not be performed casually. Diagnosis of the size and shape, position, and consistency of the uterus is essential. Oxytocics should be administered routinely during curettage in the postpartum and postabortal cases. Complications occur, and the surgeon must be qualified to treat any emergency. Perforation may be recognized by the lost curet, in which the shaft of the curet ascends through the cervix in excess of the distance between the external os and the dome of the uterine fundus. Intestines, fallopian tubes or omentum may appear in the cervix.

Perforation of the uterus should cast no stigma upon the operator who is careful with his technique. This fact should be emphasized to forestall legal complications. The immediate recognition of the perforation is important. The operation should be terminated immediately and the patient admitted to the intensive care unit. Preparation for laparotomy is instituted if there is evidence of internal hemorrhage or bowel exposure. Repair of the uterine perforation, hysterectomy, or repair of bowel trauma may be indicated.

Levin[2] reported 1 perforation in 455 cases of incomplete abortion with curettage. Word's group[3] presented 462 postpregnancy cases with 7 perforations followed by 3 laparotomies.

Materials and Methods

Hospital records of Columbia Hospital for Women and Georgetown University Hospital, both in Washington, D. C., were investigated from January 1, 1950 to December 31, 1959 (table 1). During those 10 years a total of 15,327 uterine curettages were performed, and uterine perforation was reported in 21 incidences, with a frequency of 1 in 730 procedures. In every incidence but 1 the operative procedure was performed or immediately supervised by a qualified gynecologist. In each case the operation was preceded by examination under anesthesia with the urinary bladder empty. Sounding of the cavity was done before cervical dilation in every case. The choice of dilators varies with the institution. The operating room at Georgetown Hospital rarely supplies other than Hegar dilators, while at Columbia Hospital the usual instrument offered is the Goodell. In each Hospital an alternate type of cervical dilator may be obtained on request. Most of the patients who presented a soft, boggy uterus were given oxytocics before attempting evacuation of the retained secundines. A sharp curet in these cases was rarely employed, sponge sticks and dull curets being the instruments of choice.

TABLE 1: Distribution of Patients Subjected to Curettage, the Type of Patient, and the Incidence of Perforation

	Patients	Pregnancy Complication	Menopausal	Diagnostic	Perforation
Group A......	6,238	3,127 (3)	349 (3)	2,762 (4)	10
Group B......	9,089	4,682 (4)	425 (2)	3,982 (5)	11
TOTAL......	15,327	7,809 (7)	774 (5)	6,744 (9)	21

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* Delivered at the Fourth World Congress on Fertility and Sterility, held in Rio de Janeiro, Brazil, August 8–15, 1962.

There were 21 cases of perforation, and in 9 patients the diagnosis was confirmed by laparotomy (table 2). Indications for curettage in the perforation group were, in all instances, predicated upon abnormal bleeding. In 7 patients the bleeding was caused by retained products of conception. Five patients were operated upon because of postmenopausal bleeding, and 9 patients had uterine curettage for diagnostic and/or therapeutic purposes because of dysfunctional bleeding.

TABLE 2: Type of Patient in Whom Perforation Occurred and Treatment

Indication	Patients	Perforation	Treatment
Pregnancy	7,809	7	3 observation only 1 bowel resection 1 bowel suture 1 hysterectomy 1 uterine suture
Menopausal	774	5	2 hysterectomy 3 uterine suture
Diagnostic	8,744	9	9 observation only

Laparotomy immediately followed the recognized perforation in 4 cases in the postpregnancy group. In 2 instances a loop of bowel, in 1 case a fallopian tube, and in another case omentum was prolapsed into the vagina. Two patients required repair of the intestine. There was 1 case of uterine suture and 1 of hysterectomy. Three were observed with supportive treatment and antibiotics. In the postmenopausal group there were 5 patients, 2 of whom required hysterectomy and 3, uterine suture. The patients in the childbearing period who were not pregnant had no untoward results from uterine perforation. Nine cases of perforation were present in this group but none required further surgery.

The curet was the offending instrument 6 times (table 3). The dilators, the sound, and the sponge forceps each caused the perforation 4 times. A dressing forceps perforated 1 uterus and 2 were classified as unknown.

There were 15 patients in the childbearing group who suffered perforation (table 4); 10 had previously been pregnant, and 7 of these had follow-up. Subsequent pregnancy occurred in 4 of these patients and resulted in 3 normal term deliveries and 1 abortion.

Infertility was caused by hysterectomy in 1 patient and by pelvic infection in another. Without perforation there were 10 patients with the following complications: uterine atresia, 3; cervical stenosis, 3; incompetent cervical os, 4.

Comment

The trained surgeon who is well acquainted with the necessary prerequisites that must be fulfilled before attempting dilation and curettage will occasionally perforate the uterus despite the most careful technique. In our series this accident occurred once in every 730 operations. In comparison, Word[3] reported 22 perforations on 1,671 cases, with 7 occurring in the postpregnancy group of 462 operations. This seems unreasonably high, being more than 1 perforation per 100 curettages. The largest number of serious perforations occurred in the postpregnancy group.

TABLE 3: Incidence of Offending Agent in Uterine Perforation as Reported by Operator or Pathologist

Instrument	Incidence	Per Cent
Curette	6	28
Dilator:		
Hegar	2	10
Goodell	2	10
Sponge stick	4	19
Sound	4	19
Dressing forceps	1	5
Unknown	2	10

TABLE 4: Pregnancy and Its Outcome Following Uterine Perforation

Childbearing Group	Previous Pregnancy	Follow-up	Pregnancy after Perforation	Result
15	10	7	4	1 abortion 3 term deliveries

In some of these cases the need for curettage may be seriously questioned. It would seem reasonable that dilation should be foregone when the cervix is already sufficiently patulous to perform uterine evacuation with the instrument of choice. In the recently aborted uterus, even in the nulliparous organ, dilation greater than the diameter of the curet is unnecessary and may result in damage to the cervix. In evacuating the contents of the uterus that is enlarged and softened by pregnancy the use of the finger, the sponge forceps, and a large-size curet should be sufficient. There are no data to prove that complete removal of decidua is necessary to control bleeding.

(Continued on page 158)

Culpability for Delay in the Treatment of Breast Cancer

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DELAY IN THE DIAGNOSIS and treatment of cancer has been the subject of numerous reports. Various types of studies have been carried out, but the most instructive were those in which attempts were made to tabulate both patient and physician delay and to determine the culpability for the delay. Bloom, Richardson and Harries[1] reported that of the patients with breast cancers seen at the Middlesex Hospital between 1936 and 1942 approximately 65 per cent appeared in less than 6 months from the date of the initial symptom. This is a considerable improvement over the situation between 1805 and 1933 when only 7 per cent of the women with breast cancers sought medical advice within 6 months.

In 1938 Pack and Gallo[2] published the results of a study which showed the delay in diagnosis and treatment of 1,000 patients with cancer from all parts of the body. The criteria for determining delay as established by Pack and Gallo were utilized in subsequent surveys by Leach and Robbins,[3] DeLawter,[4] and Robbins et al.[5]

A more specific study of this type was carried out at the Washington Hospital Center which concerned only female breast carcinomas.

Material and Methods

Data for this investigation were obtained from the records of the Garfield Memorial Hospital, the Emergency Hospital and the Washington Hospital Center during the period January, 1954 through December, 1960. In this 7-year period 617 primary malignant breast tumors were treated. Fifty-nine cases were eliminated from the study, 42 of them because of insufficient data on the records and 17 others because there was no histologic proof of carcinoma. There remained 558 cases for evaluation. The criteria of Pack and Gallo were accepted for the evaluation of the cases in this study. The patient was considered at fault if she delayed consulting a physician more than 3 months after the first symptoms or if she refused to accept the advice of the physician consulted. The physician was considered culpable if he failed to arrive at a diagnosis in 1 month, or when unable to do so did not refer the patient to a suitable physician, hospital or clinic, or if he failed to give proper advice or counsel or to apply proper therapeutic measures, or if he failed to refer the patient to a suitable physician, hospital or clinic when the patient failed to improve. When a combination of the aforementioned factors was present, the physician and the patient were jointly responsible for the delay. The results based on 558 cases are shown in table 1.

TABLE 1: Responsibility for Delay in Diagnosis and Treatment of Breast Carcinoma

Group	Cases	Per Cent
No delay	349	62.6
Patient delay	149	26.7
Physician delay	48	8.6
Patient and physician delay	12	2.1
TOTAL	558	100

In 62.6 per cent of the patients no delay was apparent from examination of the charts. There was a patient delay in 26.7 per cent and a physician delay in 8.6 per cent. A combination of patient and physician delay occurred in 2.1 per cent. In table 2 these data are compared to those of 4 previous investigators.

The comparison shows a remarkable improvement in all categories over the past 22 years and considerable improvement over the last 10 years. It may be seen that patient delay was decreased somewhat more than physician delay and that the number of patients without delay is almost 3 times greater than in 1938. A comparison between the current figures and those of DeLawter in 1948 are of special interest since both studies were carried out in the same city. It is of importance to explain that the methods utilized in this study were comparable to only one of the previously published series,[2] the data having been obtained from patients' charts. Statistics in the other publications[3, 4, 5] were obtained directly from the patients by the authors and were probably considerably more accurate. Despite this difference, valid comparisons can be made.

TABLE 2: Responsibility for Delay in Treatment of Breast Cancer in Different Studies in Per Cent

Group	1938 Pack and Gallo[2]	1947 Leach and Robbins[3]	1948 DeLawter[4]	1950 Robbins et al[5]	1960 This Series
No delay	23.2	42.1	42.3	47.4	62.6
Patient only	56.9	33.5	44.2	36.4	26.7
Physician only	13.8	17.8	10.6	8.4	8.6
Patient and physician	6.1	6.6	2.9	7.8	2.1
Total number of cases	246	152	104	155	558

An explanation for the improvement is not entirely clear. Other factors may have influenced the results, but the most attractive explanation for the improvement is that both patients and physicians are now more aware of the advantage of prompt investigation of breast nodules than in 1938. Patient delay may have been reduced, at least to some extent, by the publicity furnished by the American Cancer Society. The chief factor in reduced physician delay is presumably better cancer education in medical schools. Regardless of the reasons, these results constitute a tribute to the efforts of the physicians in this country to educate themselves as well as the public.

In 48 instances the physician was responsible for delayed therapy. The apparent cause for the delay in 24 patients was the inability to establish a diagnosis. The breasts of 7 women were examined repeatedly before surgery was finally performed. Aspiration of cysts was undertaken in 6 patients, and in 4 cases carcinoma was subsequently found in the area of previous biopsy. The surgeon was unable to find the cancer initially in 4 patients, and although 1 patient had bilateral breast nodules only the benign lesion was excised. Carcinoma was discovered later in the contralateral breast. Cancer was associated with a breast abscess in 2 instances, and the initial therapy was incision and drainage.

Wrong advice was given to 13 patients. Ten women were assured that they did not have cancer, and 3 were advised to "watch it." Nine women with breast cancer were given the wrong treatment. This included a trial on hormones, antibiotics, warm compresses, and "axillary injections." In 2 instances there was obvious delay in referring the patient after failure of therapy.

It is appreciated that statements made by patients are not always reliable. Some of the instances of recorded physician delay may have been due to a presumed negligence or even an actual misstatement on the part of a frightened patient who was on the defensive.

The cause for patient delay was often obscure and usually did not appear on the charts. No explanation for the delay was stated by 134 patients. It is assumed that asymptomatic tumors, ignorance, and fear of amputation resulted in delay in most cases. In 11 instances the patients were properly advised but for some reason refused operation. Four patients postponed therapy for religious reasons. All of them had far advanced disease at the time of admission.

Summary

The determination of delay in the treatment of breast cancer has been made in 558 patients in Washington, D. C. The results were compared to those obtained in Washington 12 years ago and the published series from elsewhere. The comparison shows a continuing decrease in the instances of delay on the part of both patient and physician. Nevertheless, delay in treatment was recorded in 37 per cent of the patients in this series.

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Interstitial Pregnancy*

Report of a Case and Review of the Literature of the Past Ten Years

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When the fertilized ovum implants in that portion of the fallopian tube that traverses the uterus the ectopic gestation is termed an interstitial pregnancy. This is a very infrequent occurrence, the incidence varying from 1.1 to 6.3 per cent of all ectopic pregnancies. Since the reported incidence of ectopic pregnancy is approximately 1 in 200 to 250 pregnancies[1, 2] this would make the incidence of interstitial pregnancy approximately 0.016 per cent.

There is often much confusion because of the interchangeable use of the terms cornual and angular pregnancy. A cornual pregnancy is one that has implanted in a rudimentary horn of a uterus. An angular pregnancy is one that implants adjacent to, or at the junction of tubal and uterine mucosa, wherein the gestation sac eventually is extruded into the uterine cavity, often with continued growth of the embryo to term.

The fate of an interstitial pregnancy is directly dependent on the site of nidation in relation to the tubo-uterine ostium or the isthmial junction.[3] The most frequent outcome is rupture which occurs either into the peritoneal cavity or broad ligament. The nearer the implantation is to the isthmus, the earlier is rupture likely to occur.[4] The gestational sac may be extruded into the upper angle of the uterine cavity with re-implantation or spontaneous abortion.[5] Very rarely the pregnancy may continue to term in the interstitial implantation site.[6]

Clinically, the interstitial pregnancy is often thought of analogously as a "volcano," as it suddenly erupts into a castastrophic event without forewarning. There are no characteristic symptoms. In fact, the patient is often asymptomatic until the acute abdominal crisis occurs. Intermittent dull pain in the lower abdomen in early pregnancy is a complaint that does not alert many obstetricians to a point of great concern. The anomalous bleeding that occurs with most ectopic pregnancies is unusual because the conceptus remains viable.[6] Palpation of an asymmetrical uterus is certainly difficult and would almost never be definite enough to lead to a laparotomy. In fact, in a normal pregnancy the softening that occurs in the myometrium often progresses in an irregular manner, so that not all parts of the myometrium present the same consistency to the examining fingers. As a result, this irregularity is often noted when a patient with an intrauterine pregnancy is seen during this period, making the reliability of this sign in interstitial pregnancy even less. Culdoscopy or colpotomy are not definitive. Even at laparotomy it is often quite difficult to diagnose an unruptured interstitial pregnancy.[7] When the rupture occurs the bleeding is usually massive and the majority of patients (70 to 80 per cent) are admitted in shock. Fortunately, the apparent mortality rate does not appear to be high, and this is quite difficult to explain.

Review of the Literature

An excellent review of the early literature appears in an article of Hyams[7] published in 1953. He stated that Schmitt reported the first case of interstitial pregnancy in 1801 and that the first American publication on this subject appeared in 1875 by Fitz. The first recorded operative procedure for this entity was by Traub in 1893.

During the past 10 years articles reporting large series of cases have been rare, while those concerned with unusual complications of this entity have been more frequent. Perhaps the largest study was published by Felmus and

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Pedowitz[6] in 1953. They collected a total of 45 cases from the Kings County and Brooklyn Jewish Hospitals over the 19 years, 1935 through 1953, giving an incidence of 4.7 per cent of all ectopic pregnancies. Seventy-one per cent of these patients were admitted in shock (2½ to 5 times greater than with all other varieties of ectopics). Only 1 patient died, giving a mortality rate of 2.2 per cent, and this was perhaps due to an error in surgical judgment, since an attempt was made to perform a cornual resection on a patient in deep shock. The diagnosis was made correctly prior to surgery in only 1 of these cases. Judd and Ferrero[8] reported 4 cases in 1954, in all of which the patients survived. Dr. William M. Wilson, in discussing the latter paper, reported on a small group of 8 cases collected from several Portland, Oregon hospitals.

As aforementioned, there are numerous case reports regarding unusual occurrences with interstitial pregnancy. Wrubel et al[9] (1951) published a case with torsion of the uterus and spontaneous amputation of the adnexa and round ligament. Dissick[10] (1953) reported one with cornual rupture and spontaneous amputation of the fallopian tube. A case of bilateral interstitial pregnancy appeared in the Scandinavian literature[3] in 1953. Frost[11] (1953) reported a hydatidiform mole occurring in the wake of an interstitial pregnancy. Webster and Kerr[12] (1956) reported a case with rupture into the bowel. A patient with an interstitial twin gestation was reported by Fara and Varga[13] in 1957. Cases of coëxistent intra-uterine and interstitial pregnancy were published in 1960 by Bisca and Felder[4] and in 1962 by Goodno and Gentry,[14] and Rhodes[15] reported a simultaneous tubal interstitial pregnancy in 1960. These are only a few of the many. Hyams[7] (1953) discussed the diagnosis of the unruptured interstitial pregnancy at laparotomy. Weil[16] (1955) reported a successful cornual resection done vaginally. There are also frequent reports of interstitial implantation following salpingectomy.[5, 17, 18, 19]

It is obvious that the entity is too rare to permit many large series.

Report of Case

D. C., a 39-year-old separated Negress, gravida V, Para III, abortus 1, was admitted on November 15, 1961 with the chief complaint of right lower quadrant pain. Her menses had been essentially regular and normal (12 by 28 by 7–8) until July, 1961. After missing August and September, and thinking that she was pregnant, she saw an abortionist in mid-September who inserted a catheter into the vagina. This was left in place for 24 hours and after removal was followed by heavy bleeding for 8 days without fever. She stated that she thought she noted passing "tissue" at this time. She bled again for 8 days in October and in November, with a 28-day interval. A pregnancy test was positive at another hospital 3 weeks prior to admission.

Five days prior to admission she noted the onset of minimal intermittent right lower quadrant pain. This became extremely severe during the 6 hours immediately preceding admission and was associated with 2 episodes of vomiting, several loose bowel movements, and severe pain on defecation. She denied shoulder pain, urinary symptoms, and chills or fever.

Her temperature was 99°F, the blood pressure was 80/30 Hg, the pulse rate 110 per minute, and the respiratory rate 14 per minute. She was alert and in severe acute distress. The abdomen was soft and moderately obese with subjective guarding throughout. There appeared to be some fullness in the flanks. An 8 to 10 cm. cystic mass was easily palpable in the right lower quadrant. This was exquisitely tender and would evoke referred rebound tenderness from all other quadrants. The vagina was essentially negative. The cervix was firm and had a minimal erosion. The corpus was difficult to outline because of tenderness but was thought to be anterior and of normal size and shape. The adnexa were tender bilaterally and were otherwise remarkable only in that abdominal mass could not be pushed down into the pelvis. The cul-de-sac was full and tender. The hemoglobin was 9 Gm., the hematocrit 31.5 per cent, the white blood cell count 11,200, and the urinalysis normal.

After receiving 1 unit of dextran and 1 unit of whole blood rapidly the patient was immediately taken to the operating room where an exploratory laparotomy was performed. The corpus was the size of a 12- to 14-week gestation and asymmetrically enlarged in the right cornual area. A rent measuring approximately 3 cm. in diameter was found in the posterior aspect of this position of the corpus. The rent was approximately 2 cm. from the insertion of the tube. The placenta was found implanted under the rent, and protruding through the latter was the umbilical cord which was attached to a 14 cm. fetus found floating free in the peritoneal cavity. Approximately 2,000 c.c. of free blood and clots were found in the peritoneal cavity. Both tubes and ovaries were normal.

A total abdominal hysterectomy was performed. The patient received a total of 5 units of whole blood and tolerated the procedure well. The postoperative course was complicated by disruption of the midline incision on the seventh postoperative day. The wound was secondarily closed and then healed well. The patient remained in the hospital for 10 more days and was discharged home after removal of the retention sutures.

The uterus and cervix had a combined weight of 280 Gm. The approximate reconstituted dimensions of the corpus uteri were 15.0 by 10.0 by 8.0 cm. In the right cornual area there was a swelling and rent which measured 2.5 cm. in diameter. Protruding through the rent was what appeared to be an umbilical cord. Lying outside the uterus was a male fetus which had a crown-heel length of 15.0 cm. and a weight of 100 Gm. On opening the uterine cavity it was found to have a lining which was yellowish and soft, compatible with decidua, but there was no evidence of products of conception in the entire uterine cavity. On opening the tumor, between the right tube and the ostium of the right tube into the corpus uteri there was a placental sac and cord embedded in the area compatible with interstitial pregnancy (figures 1, 2 and 3).

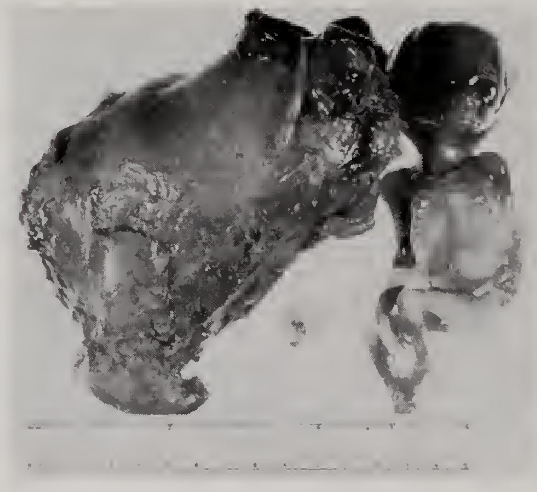

FIG. 1. Posterior aspect of uterus—note marked elongation of the right cornual area. Protruding through the rent is an umbilical cord. A fetus, 15 cm. crown-heel, was found floating free in the peritoneal cavity.

Sections of the cervix revealed great hyperactivity and hyperplasia of the basal-cell layer of the cervical epithelium and leukoparakeratosis of the surface epithelium. There were areas where the basal-cell hyperplasia reached the surface of the epithelium and areas where the basal-cell hyperplasia blended into cells which had lost their polarity and increased mitotic index and involved the endocervical glands. The endocervical stroma was marked by an acute suppurative inflammatory reaction with polymorphonuclear leukocytes.

Sections of the uterus revealed the endometrium to have a decidual reaction with chronic inflammatory cells.

Sections of the right tube revealed a decidual reaction and moderate infiltration of the tubal wall by the inflammatory cells. The interstitial portion revealed products of conception, approximately 16 weeks' gestation, characterized by chorionic villi which had enucleated red blood cells. The cord had a mild inflammatory infiltration.

The amniotic membrane was edematous. The chorionic plate showed areas of hemorrhage. The overall picture of the placenta was that of a compressed organ with very few intervillous spaces. A considerable number of chorionic villi showed fusion and there was a marked degree of fibrosis and sclerosis of the connective tissue stroma of the chorionic villi (figures 4 and 5). The basal plate showed decidual cells with a heavy deposition of fibrinoid. The surrounding myometrium showed vascular hyperemia and infiltration with acute and chronic inflammatory cells.

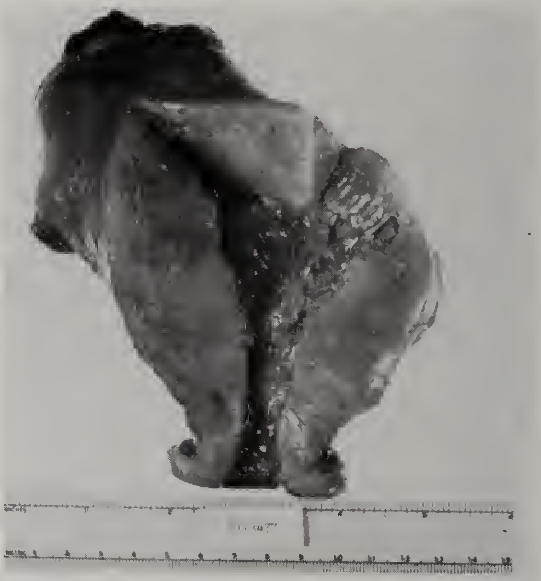

FIG. 2. Anterior view of opened uterus. Note decidual changes of endometrium, endometrial cavity being otherwise normal.

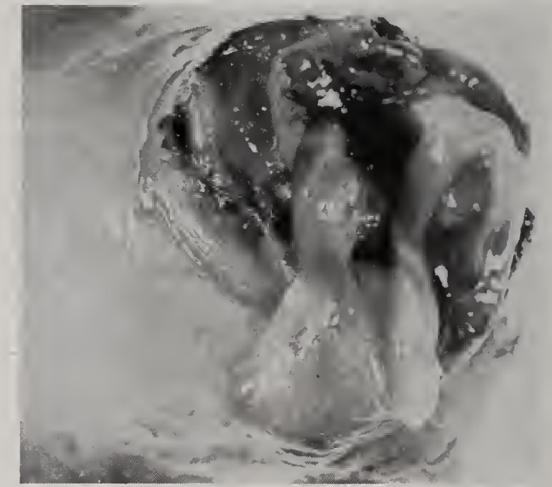

FIG. 3. Rent of right cornual area with protrusion of cord and membranes.

Diagnoses were carcinoma in situ with glandular involvement, cervix; deciduitis, chronic, mild; decidual reaction, right tubal mucosa; salpingitis, chronic, right; interstitial pregnancy, ruptured, right at approximately 16 weeks; and fetus, 15.0 cm. crown-heel, 100 Gm., male.

Postmortem examination of fetus revealed a male fetus weighing 100 Gm. and measuring 15 cm. crown-heel. There was no gross or histologic evidence of malformation or any degenerative changes.

Discussion

The case reported herein is quite characteristic of an interstitial pregnancy. The history was somewhat clouded by attempted interruption with a rubber catheter 2 months prior to admission, and this increased the inherent difficulties in accurate preoperative diagnosis. The patient was admitted in shock, and surgery was performed within several hours. An ectopic gestation was considered preoperatively, but there was no thought of the interstitial implantation site. The time of rupture (16 to 18 weeks) was typical.

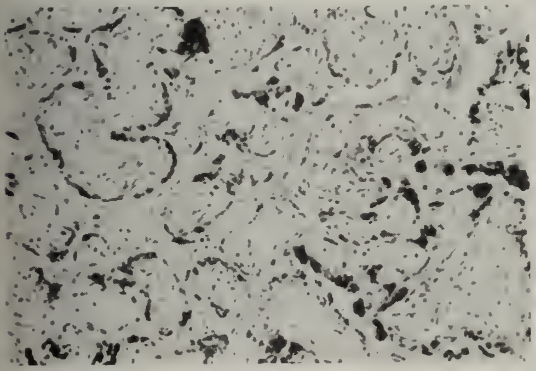

FIG. 4. Compressed placental tissue with very few preserved intervillous spaces.

The pathologic anatomy has been described in detail. Interesting changes in the placenta were observed. Apparently due to limitation of growth by the myometrium, the number of intervillous spaces had been markedly reduced and the chorionic villi had undergone fusion forming almost solid areas in the placenta. The vascular supply was derived from dilated vascular channels of the myometrium. The endometrium showed no evidence of trauma from the catheter insertion. An unexpected coincidental finding was the intraepithelial carcinoma of the cervix.

Interstitial pregnancy is a very grave entity, and it is most fortunate that it is so rare (0.016 per cent). One would do well to remember this form of ectopic pregnancy to be thought of when shock due to obvious intraperitoneal bleeding occurs in the second trimester. Immediate laparotomy is mandatory.

Hysterectomy is the treatment of choice, but in selected cases cornual resection may be considered.

Summary

A case of interstitial pregnancy has been presented in detail. The clinical and pathologic aspects have been discussed. The difficulties in diagnosis have been emphasized, and the literature of the past 10 years has been reviewed. Morphologic changes of the placenta characterized by great diminution of intervillous spaces and fusion of the chorionic villi due to compression by the myometrium have been observed for the first time in such ectopic placentation.

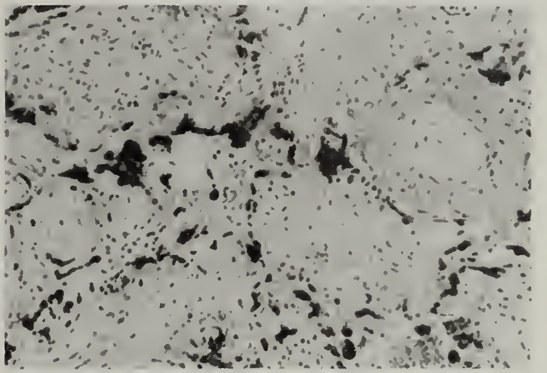

FIG. 5. Chorionic villi showing fusion and marked degree of fibrosis and sclerosis.

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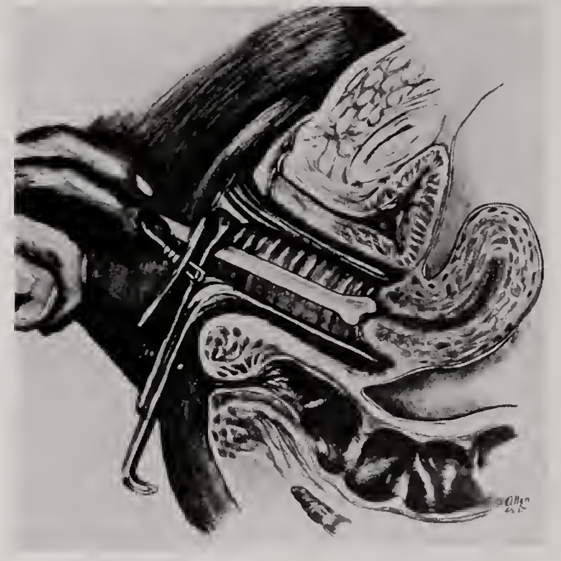
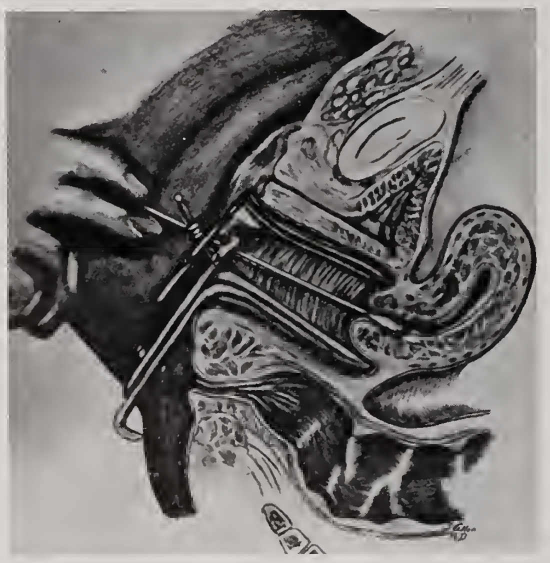
Conquering Uterine Cancer is EVERY Physician's Responsibility

Preferred Technique



Scrape the portio with ONE COMPLETE turn around the os. Deliver cells to glass slide with EVEN spread.

and



Twirl cotton applicator to firmness. Twirl in the same direction while picking up cells and delivering to glass slide.

The simple procedures illustrated are highly efficient in detecting early asymptomatic, unsuspected cervical cancer and many cases of corpus carcinoma.

The only chance of diagnosing *early* cancer—before symptoms occur—is to make a practice of examining WELL patients REGULARLY.

Vaginal cytology should be a part of periodic pelvic examination of both pregnant and non-pregnant patients.

A

VAGINAL CYTOLOGY KIT

may be obtained

free of charge from:

The American Cancer Society

District of Columbia Division, Inc.

810 18th Street, N.W.
Washington 6, D.C.
EXecutive 3-3690

RESEARCH
EDUCATION
SERVICE

PRESIDENT'S PAGE

A CHANGE IN THE MAKING?

The practice of medicine has lost some of its glamour and appeal as compared with other careers, in the minds of some candidates for postgraduate training. One reason for this has been the protracted periods of internship and residency during which the young M.D. can see him- or herself standing still financially and often family-wise while his contemporaries in other fields fare better. Whether it was in recognition of this factor or not, the House of Delegates of the American Medical Association for 2 years has been moving in a direction with which we should all acquaint ourselves. Your delegates to the June meeting of the AMA will face this matter.

The House of Delegates in June 1961 adopted several principles of great importance, and among these were:

1. The graduate physician serving on a hospital house staff is entitled to remuneration commensurate with his training and experience.
2. The medical profession must assume an increasing responsibility in furthering the above.

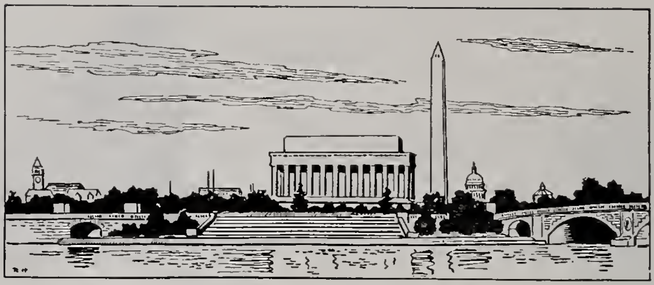
These, in conjunction with the long-standing tenet that a physician is entitled to payment for services rendered by him, form the basis of a full discussion of this matter in the October 26, 1962, issue of J.A.M.A.

Implicit in the words, "remuneration commensurate with his training," is the thought that such house officers who are affected should be paid a living wage. The level of this would vary from one area to another but it would be expected to make these trainees relatively independent of family or other sources of funds. Whence will this money come?

If the premises of a need for an increase in house staff salaries and that the present cost of hospitalization is perilously high are accepted, it immediately becomes the responsibility of the medical staffs of hospitals to develop a source of funds to meet the program. In this connection it is pointed out that the rapid rise of third-party medicine has sharply reduced the number of open ward or charity patients who traditionally constitute the house officer's "practice." The house officer is now dealing largely with pay-patients in many institutions. Where do the payments for professional services from these patients go?

The changing times have not altered the physician's responsibility to train younger men. An increase in monetary compensation cannot be substituted for a sound continuing postgraduate training program. Candidates will still have to be properly motivated. If the community of practicing M.D.'s can meet these challenges, it will demonstrate a strength sufficient to hold its place regardless of political climate.

R C Corley



EDITORIALS

"The Year of the Volunteer"

This year, 1963, has been designated by the American Cancer Society as "The Year of the Volunteer," and with good reason. Volunteers from every walk of life, lay and professional, joined together in the cause of cancer control, have proved through the years to be an effective force in making progress against this disease.

Here in Washington, as throughout the country, the physician volunteer is vital to the work of the American Cancer Society. More than 200 members of the D. C. Medical Society devote hundreds of hours each year to the Society's programs.

What do they do?

Many serve as speakers on educational programs conducted all year long for groups in Government, in business, in schools, in clubs and in organizations. By their participation doctors help alert more people to the tremendous value of early detection and prompt treatment for cancer. Surely there is no question but that the work of the Cancer Society has been at least partially responsible for the fact that we are now seeing patients earlier—and as a result we are saving more lives from cancer every year.

Physicians also contribute their time to help keep professional personnel abreast of the latest developments in cancer control. Last year the local Cancer Society won a national award for its outstanding program in professional education—guided by physicians and reaching out to include nurses, dentists, students, technicians and others concerned with the diagnosis, treatment and care of cancer patients.

Still other physicians are devoting their time and talents to guide various programs—in service to cancer patients, in research, and in many aspects of the Cancer Society's activities.

Naturally, every physician cannot be expected to volunteer for the American Cancer Society in the strict sense of the word. However, every physician can volunteer in a very simple way—just by acquainting himself with the programs of the Society and by urging his patients to take advantage of the many services offered.

When you have a patient who has problems related to cancer, whether the problems be financial or emotional, the American Cancer Society is prepared to help. A full-time counselor is available daily during regular office hours to give warm, friendly guidance and assistance, and, in many cases, the only way patients learn about help available is through their physician.

These services—and lifesaving programs in education and research—are carried on day in and day out by volunteers of the American Cancer Society. During April, which is designated by Congress and by the President of the United States as Cancer Control Month, a special volunteer will be calling on you, the volunteer Cancer Crusader.

As physicians, we know that the American Cancer Society plays an important role in the community and that it deserves our financial support.

When the Cancer Crusader calls on you we hope you will give generously. We hope, too, that you will volunteer throughout the year by taking advantage of the programs and services which your contributions make possible.

John Parks, M.D.
Vice President, American Cancer Society,
District of Columbia Division, Inc.

Opinions expressed in contributions to the Editorial Section are those of the writers and do not necessarily reflect the views of the Medical Society of the District of Columbia

Our November Assembly

The annual three-day ASSEMBLY of our Society—this year November 18 through 20—has several outstanding characteristics. Uniformly the quality of the scientific papers, discussions, and exhibits is of a high order of excellence. As these meetings occur in "the Capital of the World" they tend to receive unusual coverage from the press. A characteristic unique among the sovereign components of the American Medical Association is that our meetings are always held in the area immediate to where we practice and live. This presents certain advantages but has the disadvantage of providing hard to avoid distractions made by the professional and social demands that surround us when we are in our home city. This is the chief reason, it would seem, for the sometimes poor physician-attendance at our annual meetings.

Topics are chosen to appeal to the largest number of our membership and include the newest innovations in the diagnosis and treatment of well established entities, plus presentations of ideas and techniques only recently visualized on the medical horizon. The chief responsibility in this area, of course, is vested in the Program Committee, whose chairman will outline the content of the November meeting in a later issue of the ANNALS. In their deliberations and planning this committee must weigh the factor that less than half of our Society is engaged in general practice and be mindful that our membership is unusually sophisticated, working as it does in and about numerous medical facilities of national renown.

At this time, 7 months prior to the meetings, as in the past years, all committees are actively at work to set up the best possible program of scientific and social events. The chairman of each of these committees will describe the plans in succeeding issues of the ANNALS.

We look hopefully to well filled meeting rooms and exhibition halls.

BERNARD J. WALSH, M.D.
General Chairman, Annual Scientific Assembly

AMA-ERF Progress Report

A progress report of December 31, 1962 shows that nearly 1 of every 10 medical students in the country now has borrowed under AMA-ERF's Loan Guarantee Program.

Through December 31, 1962 a total of 4,694 individuals (2,890 medical students, 672 interns, and 1,132 residents) received 5,299 loans worth $6,111,400 in principal amount. Ten per cent of the borrowers applied for and received more than 1 loan. The borrowers are in training in 83 medical schools and 462 hospitals in 46 states, the District of Columbia, and Puerto Rico.

Third highest in the amount of loans received is the District of Columbia, with a total of $331,400 loaned to 222 medical students, 21 interns, and 38 residents. More than twice this amount, $753,600, went to California and $360,200 to Tennessee.

In the District of Columbia Georgetown University is credited with 41 borrowers, for a total sum of $55,800; George Washington, with 81, principal value of loans, $70,500; and Howard University, with 100, total value of loans, $125,700.

The vast majority of the borrowers, 97 per cent, are men. Seventy-two per cent are married, 25 per cent are single, and 3 per cent are divorced, separated or widowed.

Established in March 1962 to provide medical students and physicians in training with a ready resource to meet essential living and education costs, the program allows a maximum of $1,500 a year, and $10,000 over 7 years, to be borrowed by an approved applicant, with no payment of either principal or interest required until 5 months after completion of training.

Applicants must be U. S. citizens in training and in good standing in an AMA-approved medical school or hospital. First-year medical students must have completed their first quarter or semester to qualify. Each applicant must demonstrate, through a listing of present assets, debts, and estimated expenses and income, a clear need for loan funds.

Of the 5,823 loan applications received through the end of the year only 6.8 per cent had been rejected by the Continental Illinois National Bank & Trust Company, of Chicago, the institution currently making the loans under this program.

All approved loans are guaranteed by AMA-

ERF. The bank has required the posting of $1 in a Guarantee Fund for every $12.50 it extends in credit.

Loans already made, together with estimated interim and payout interest, have committed more than 80 per cent of the Guarantee Fund. (During the interim period, before repayment begins simple interest accrues at the rate of 5.5 per cent. During the pay-back period, which extends up to a maximum of 10 years, 6.5 per cent simple interest is charged, computed monthly on the amount still outstanding.)

The Fund's uncommitted balance of $176,543 is sufficient to guarantee approximately 1,200 additional loans. If the present rate of borrowing continues, however, some 7,200 loans will be made in 1963. To make these loans possible, it will therefore be necessary to increase the Guarantee Fund by at least $1,000,000 this year.

Some confusion seems to exist in regard to solicitations of funds by and for the American Medical Association Education and Research Foundation. An item on "AMEF" was included on the statement for AMA dues. This is strictly for Medical Education and you may designate the school to which you wish it to go. However, AMA-ERF (which now includes AMEF) has 2 programs—funds for Medical Schools and the Medical Education Loan Guarantee Program.

In reference to these 2 programs the AMA writes:

"This year we plan to make 4 mailings to physicians. One in January has already been made and was in support of the Loan Guarantee Program. Another mailing will occur in April in support of funds for Medical Schools, a mailing in September will be made again for the Loan Program and the final mailing in November will again concern funds for Medical Schools."

Who Pays the Premium?

The question is often raised as to who pays the premiums in groups covered by health insurance. Originally it was generally considered best for the employee and employer to share in these costs. However, in recent years the burden seems to be slowly shifting to the employer. In 1962, some 41.2 per cent of employees were covered by plans paid entirely by the employer compared to 39.7 per cent in 1961 and 33.6 per cent in 1960.

In 1962, according to *Health Insurance News*, only 3.9 per cent of employees paid the full cost of coverage while 54.9 per cent were covered by plans in which the employer shared in the cost.

Letters to the Editor

Food Allergy

With regard to Dr. April's article, "Food Allergy—A Practical Approach," in your November MEDICAL ANNALS, I would like wholeheartedly to agree that "there is still a great diversity of opinion among allergists concerning the relative frequency of food allergies." In this particular field more than most opinions will be proportional to the diligence with which a search is made. Those who look, find food allergens frequently; those who believe it is not worthwhile looking or who stop short of effective techniques manage to justify their preconceptions that food allergy is uncommon because they do not find it.

It is distressing to learn that when a patient reports that he experiences a rash following the ingestion of each of several fruits, the probability that this might be due to an allergic mechanism is summarily dismissed on the grounds that the several fruits are allergically dissimilar. Actually allergy to multiple foods is no less common than is allergy to multiple fungi or to multiple pollens. Furthermore, allergic reaction to insecticide spray on fruits has, as a matter of fact, been reported. In these cases the insecticide and not the various fruits themselves is the offender.

I would like to point out a basic and commonly held misconception. This is that where a particular food is eliminated and no clinical improvement follows, "that food can certainly be ruled out as an offender." When one manipulates single dietary factors and the patient is allergic to 2 or more foods (as say eggs and milk), the elimination of milk may be complicated by ingestion of more egg. In this situation not only may the patient show no improvement, he may even become more ill if egg is the more severe of the 2 offenders for him.

I am happy to confirm Dr. April's conclusion that the final criterion identifying a food allergen is clinical trial following a period of avoidance for the food in question and allergically related foods. I would go even further and require that major foods not be eliminated for any prolonged period until 3 such provocative trials have been carried out. Exception would be made where reactions were alarming or singularly dramatic. The yield of positive diagnoses of food allergens would be increased by lengthening the period of elimination to a minimum of 7 days and in the case of the grains to 14 days. All of the grains should be simultaneously eliminated. Provocative feeding should not stop at a single feeding but in the absence of a reaction should be repeated daily (for the elusive grains for at least a week), since cumulative reactions appearing from 4 to 7 days after continued heavy intake are common.

Very truly yours,
ELOISE W. KAILIN, M.D.

Cancer Morbidity Review*

THE CANCER MORBIDITY REVIEW of the Medical Society of the District of Columbia has been functioning since 1958 in 8 District of Columbia hospitals, namely, Georgetown University, George Washington University, Columbia, Freedmen's, Sibley, Providence, District of Columbia General, and The Washington Hospital Center. The Clinical Center of the National Institutes of Health also participates.

Pelvic carcinoma has been studied from the standpoint of cancer detection, educational value, and qualitative care. The objective of this study is the education of physicians, thereby bringing about better methods of cancer detection and treatment. Staff patients were reviewed initially; private patients were included starting in 1960 by permission from the hospitals.

An effort is made to compile as many cases as possible from each hospital each month. Monthly case meetings are held throughout the year. From 6 to 9 of the most interesting cases are selected each month and are discussed from the standpoint of cancer detection, educational value, and qualitative care. All physicians connected with the cases are invited to attend, plus all other interested physicians, gynecologists, general practitioners, general surgeons, radiologists, pathologists, and oncologists. A special effort is made to encourage the resident-intern staff of the hospitals to attend. The participation of all physicians is solicited in order that we may all benefit by an exchange of knowledge in the diagnosis, management, and treatment of pelvic carcinoma. One hundred and two guest physicians directly concerned with the cases under review have attended meetings.

In addition to the history given to the hospital by the patient, the private physician is always asked for a complete account of his examination, diagnostic procedure (if any), treatment, and date of referral to the hospital for further diagnosis. Thus, an accurate account of each patient is usually obtained. This is essential in assessing the cases according to the principles of the Review.

The cases are assessed as to delay or no delay in diagnosis, cause of delay, and quality of treatment. When a physician concerned with a case is absent from the meeting a description of the case with discussion attached is sent to him. Emphasis is placed on the physician performing a complete pelvic examination with Papanicolaou smear on all patients coming in for a routine examination and on patients with pelvic or abdominal symptoms. Physicians should instruct patients to establish the yearly or semi-yearly pelvic examination as good health practice. It is recommended that a preoperative diagnostic procedure be done whenever possible with evaluation and staging of the disease before definitive treatment is instituted.

From January, 1958 through June 15, 1962, 736 cases were reviewed (303 private and 433 staff). One hundred and sixty patients were subsequently diagnosed as having cancer after complete pelvic examination and Papanicolaou smear in private physicians' offices, Cancer Detection Clinics, prenatal, postpartum, medical, and skin clinics, or after hospital admission for other reasons. This represents 21 per cent of the cases reviewed, both private and staff. These patients did not complain of abnormal pelvic symptoms at the time. Five hundred and thirty-two patients, or 72 per cent of the total, had pelvic symptoms. Of these patients, 113 delayed more than 6 months from the onset of symptoms until the patient first sought consultation with the clinic or the private physician; 101 patients delayed from 3 to 6 months before seeking medical advice; 150 patients delayed from 1 to 3 months.

Some of the patients are interviewed. (No mention is made of the diagnosis of carcinoma.) A number of patients advised that a rectal examination had not been made at the time of the pelvic examination. It was also learned that a breast examination is not always included in the yearly or semi-yearly routine pelvic examination by some physicians.

Of the 303 private patients it is evident that there was a definite delay in diagnosis of 11 patients (4 per cent) attributable to the private physician. Approximately 163 of the 433 staff patients consulted private physicians for pelvic symptoms, medical reasons, or routine pelvic examination. Of these 163 there was a delay in diagnosis of 26 patients (16 per cent) on the part of the private physicians before the patient was hospitalized. Review of the records showed that not all patients with an established diagnosis of gynecologic carcinoma are evaluated preoperatively in an effort to correctly stage the disease before deciding upon the best initial

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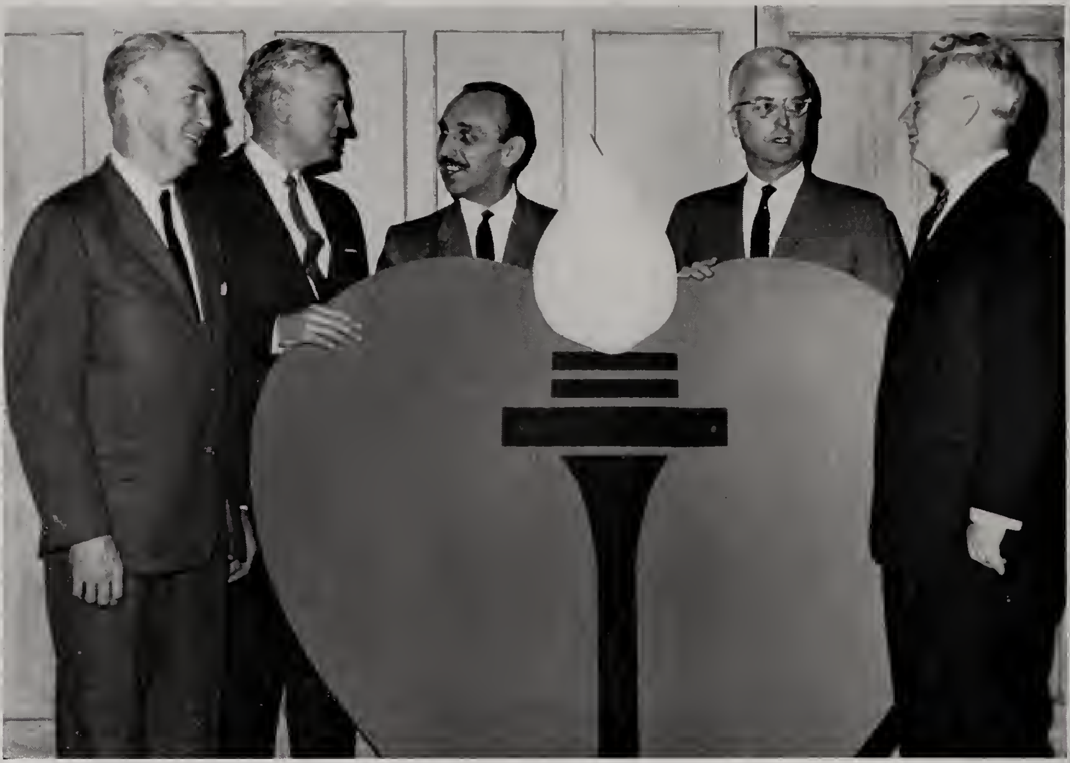
* Presented to the Executive Board of the District of Columbia Division of the American Cancer Society, December 20, 1962, and to the Executive Board of the Medical Society of the District of Columbia, January 28, 1963, by Dr. Stafford Hawken, Chairman of the Cancer Morbidity Review Committee.



WASHINGTON HEART ASSOCIATION AWARD-WINNERS: Dr. Howard C. Pierpont (center), President of the Association, presented 4 Awards for Distinguished Achievement or Service at the Association's Annual Meeting, January 30, at the Mayflower Hotel. The recipients were (left to right): Dr. Hill Carter, honorary member of the Board of Directors; Dr. John W. Latimer, Jr., immediate Past President of the Association; the Honorable John W. Macy, Jr., Chairman of the U. S. Civil Service Commission; and Mr. William T. Hannan, attorney and a member of the Association.

treatment.* However, we believe that more preoperative evaluation is being done by more physicians as a result of discussion at the case meetings.

There is a definite increase in the number of cases of carcinoma in situ of the cervix diagnosed as a result of including the Papanicolaou smear as part of the routine pelvic examination. A Papanicolaou smear should be included in the initial pelvic examination of all pregnant patients and in all patients coming for pelvic examination. This is one time when patients can be taught to establish good health practices. The physician's office must be a diagnostic and detection center.

Patients ranged in age from 11 to 92 years. Out of 433 staff cases, 304 patients, or 70 per cent, ranged in age from 31 to 60 years. Out of 303 private patients, 207, or 68 per cent, were in the same age group, 31 to 60 years.

We recommend that increased information be made available to the general public to alert people to the value of seeking medical attention when unusual symptoms occur and to educate them to the habit of annual or semi-annual complete physical examination. We recommend also that the principles of this Review be continued in each hospital as a greater extension of their Tumor Boards.

The Medical Society of the District of Columbia is deeply appreciative of the grant given by the American Cancer Society, D. C. Division, Inc., for this professional education project.

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* Preoperative evaluation here means chest X-ray films, intravenous pyelography, cystoscopy, proctoscopy, barium enema, and bone survey. Routine urinalysis, blood count, and medical evaluation for cardiac function and blood pressure are always done.

Norway Experiments in the Care of the Aged

THEODORE WIPRUD*

Washington

Although tourists from all parts of the world have been thrilled by Norway's majestic mountains and lovely fjords, few are aware that this is a country poor in natural resources. Only by dint of hard labor have her people wrested a good living from her stony soil, turbulent streams, and the sea. In the process, Norwegians have become a hardy race.

Today, with a population slightly in excess of 3,600,000, Norway has the highest life expectancy in the world. The average for male infants is 71 years and for females, 75 years. Dr. Karl Evang, Director General of the Health Services, credits this to his country's high standard of living and to "a well organized society."

Where medical care is concerned, Dr. Evang points out that this is "basically simplified by the fact that 100 per cent of the Norwegian population are members of the health insurance plan." Aware of the controversy in the United States over the adoption of a compulsory health insurance system, and more recently the proposed Social Security medical care program for the aged, he says, "Unfortunately some seem to think that systems developed in other countries may slavishly be transferred to their own country." He is not too happy about what he says are distorted reports published abroad about Norway's health services.

Before going to Norway this past summer I wrote Dr. Evang that I had read his report on his country's health services and that I was intrigued by his reference to "interesting experiments" in the care of the aged. He replied that arrangements would be made for me to see what I wished and to discuss the experiments with those best informed.

Ulleval Hospital, situated in Oslo, Norway's capital, which I first visited, is a municipally owned institution. It accommodates 2,000 patients in a number of buildings, one of which is solely devoted to the care of the aged. Head of the unique department in this building is Dr. Viktor Gaustad, a pioneer in geriatrics. Although moderately pleased with the progress made in his field in Norway, he said his country, like many others, belatedly recognized that care of the aged was to become a serious problem. As in the United States, it has been plagued by the lack of medical personnel, especially nurses. For example, more nurses were graduated in Norway in 1960 than necessary to meet the needs of the population, but because of marriage, sickness, death, weariness and other reasons there still is an acute shortage. In an effort to improve this situation, short courses for practical nurses are being initiated.

Two types of patients are accepted here in the geriatric department, which, incidentally, accommodates 182: those who give promise of being rehabilitated and those acutely ill whose home conditions make it imperative that they be hospitalized.

There is no means test applied to those who seek admission to Ulleval Hospital. All Norwegians 70 years of age are entitled to basic pensions from the national government, approximately $500 a year for a married couple and $350 for a single person. As a rule the municipality or "commune" grants supplementary pensions. In addition, there are pensions to which persons in certain occupations are entitled. A portion of the supplementary and non-basic pensions, together with the basic pension, must be used to pay for institutional care.

Every effort is made by Dr. Gaustad and his staff to return patients to their homes. In 1960 one-third of the patients hospitalized in Ulleval's geriatric department were discharged to their homes.

"It is very important," Dr. Gaustad said, "to consider old age as an active period in life." Surveys have revealed that a fourth of the men in Norway over 70 still receive a substantial part of their income from work, and that three-quarters of the women in this age group do housework.

Dr. Gaustad's enthusiasm is not reserved for institutional care for the aged. A governmental committee recently studying this problem found that 10 per cent of the people over 70 needed institutional care, 7 per cent needed to be in a nursing home, and 3 per cent in an old age home. In Dr. Gaustad's opinion the percentage which the committee found needing institutional care is high. "I am sure," he stated, "that the need can be considerably reduced by improving housing conditions and increasing the amount of health and welfare services. One of our county health officers has stated that by doing this the need for old age homes might be reduced to nearly zero and the beds in nursing homes to 5 per cent of the population over 70."

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* Special Assistant to the Executive Vice President of Medical Service of the District of Columbia; formerly Executive Director and Secretary, The Medical Society of the District of Columbia.

In line with this view, Oslo has now financed 2,000 "flats" for its senior citizens. "We are interested in giving the aged not only a place to live," said Dr. Gaustad, "but a home where they thrive and feel secure." The aged who are physically and mentally capable of caring for themselves with some assistance from the health and welfare centers pay as small a rental as $10.00 a month. Where necessary, food is brought to occupants ("Meals on Wheels"). Among other services provided where needed are baths, foot care, laundry, and economic guidance.

The health and welfare centers are under the direction of the Gerontological Research Institute. In 1958 the Institute conducted a survey of the aged in its environs to determine their health and living conditions and their need for health and welfare services. In all, 2,460 registered. However, a sizable number were then disinterested in the services offered. As was to be expected, common disabilities such as rheumatism, giddiness, and foot trouble were more prevalent in those of advanced years.

Of special interest was the response to the query about old age homes. Two-thirds said they would never move into such homes. On the other hand, a sizable number would rather receive help from society than from their children.

Dr. Gaustad had high praise for the voluntary health organizations in Oslo which have contributed so much to a forward-looking program for the care of the aged. One out of every 2 citizens is a member of some health organization.

When asked to comment on nursing homes both in Oslo and in other parts of the country he said that unfortunately there are no uniform standards or regulations governing such homes. He hoped this would soon be remedied.

In most places throughout the country old age and nursing homes are combined. Although many are nothing to boast about, Dr. Gaustad said there have been an increasing number of new ones built in various communities conscious of the needs of the aged. All of the old-age and nursing homes are locally financed and operated.

One of the newest homes is in Tønsberg, Norway's oldest city of about 13,000 population. It is under the immediate supervision of Theodore Broch, City Manager. One suspects that Mr. Broch's deep interest in the care of the aged stems from his experience as Mayor of Narvik, a city far to the north, during World War II. There the people were for a time on a near starvation diet. At any rate, his interest in the problems of the aged is demonstrated by his recent activities. He has played a leading role in the planning of an unusually attractive old-age and nursing home in a city where 10 per cent of the population are 70 or older, the average age for the men in this group being 71.1 years and for the women 74.4. All of the aged in the community regardless of income are eligible for admission to the home. However, those who can pay are expected to do so.

A contributing factor to the cheerful atmosphere of Tønsberg's home is its decor—the warm colors used in decorating its walls and the colorful and comfortable furniture. There is also a sizable occupational therapy room. Of unusual interest are the many beautiful paintings on the walls which were collected by Mr. Broch. "Residents of the home, like all Norwegians," Mr. Broch said, "find much pleasure in pictorial art."

What did the residents think of the home? They appeared to be an unusually contented lot. However, Mr. Broch expressed views which coincided with those of Dr. Gaustad. Institutionalizing the aged should not be resorted to unless unavoidable. He also said the cost in institutions is nearly 10 times that of housing the aged in "flats," of which Tønsberg has a number. Here, as elsewhere, those who live in "flats" pay a modest rent. A resident in one of those visited was an elderly, white-haired woman who said she was most pleased with her apartment. She was surrounded by her own belongings—furniture, pictures and other things which all people treasure with advancing years. Because she was less than robust, city nurses looked in on her regularly.

As one might expect, homes for the aged and nursing homes in rural Norway are for the most part not modern, but all are scrupulously clean. Since they are locally financed one suspects they reflect the economic status of the community.

But there are exceptions, and what is known as Grandsherad Bygdeheim is one. Several miles inland, this home is by any standards a modern institution; with a capacity of only 15 beds, it cost the community $110,000. There are modern kitchens on each floor of this home, also lounges and comfortable single rooms. Although not yet in use, there is an occupational therapy room which will be used also as a recreational center for the community's aged. This home is in Hjartland in the province of Telemark. Three per cent of its population are over 70. Only a generous and sentimental people would make such a costly investment for so few. Dr. Olaf Hytta, the local health officer, who is also engaged in general practice, is justly proud of the facilities of this home, even though he agreed the community perhaps went overboard in spending so much money. Dr. Hytta in his official capacity is in charge of all nursing homes in the area.

Dr. Evang strongly favors leaving the responsibility for the aged in the hands of the local communities. "They know best their needs," he said. With regard to their care, he wrote recently, "The most common solution is to build old people's homes." But an effort is being made in Norway to keep as many people in their own homes as possible. Should this prove impossible, noninstitutional care is to be desired. Obviously here he was referring to services provided the aged in their own homes.

He further said, "Experience has shown that many of the ills of the elderly can be prevented or postponed if care is begun early. It is essential to counteract the loneliness and inactivity which older people feel when they retire and to help them find some useful enterprise which can arouse their interest and energy." Like Dr. Hytta, Dr. Evang is of the opinion that it is amazing what can be done to activate elderly people who have long been considered finished with life.

The overall impression I gained of Norway's program for the aged during a 3 weeks' visit to that country was that of genuine concern for its elderly people. Like other countries, it was late in recognizing that the segment of its population over 65 would present serious health and social problems. However, it has made rapid progress in dealing with them in recent years. This has been possible partly because Norway has a small and homogeneous population. On the other hand, a dedicated leadership and solid public support are also important factors.

Despite obvious shortcomings, both as to facilities and personnel for the care of the aged, the United States can learn some valuable lessons from Norway.

Cured Cancer Club

"Cured Cancer Club" might suggest a group of people who get together to compare sanguinary details about each other's cancer operation or who meet to boast of their victory over the "cancer dragon" in an effort to make each one feel like a miniature St. George. Therefore, when I was asked to address the Cured Cancer Club I investigated the group before accepting the invitation.

A visit to a Club meeting soon convinced me that the members were by no means engaged in idle pursuits or in self-jubilation. They met with one basic purpose in mind: to help people who have cancer. This they do in several ways.

A young woman became acutely depressed and wouldn't allow the surgeon to operate after she was told she had carcinoma of the larynx. The Cured Cancer Club heard about her. A personal visit was made to the patient and the patient's pastor was asked to see her. Subsequently she underwent laryngectomy and is successfully convalescing with the moral assistance of follow-up visits by Club members.

This case illustrates the first purpose of the Club—to give hope and reassurance to patients with cancer and to encourage those convalescing from it. As noted, the purpose is accomplished by personal visits, by telephone calls, and by correspondence. In one year, 1961–62, the Club answered about 1,000 letters, many from foreign lands. The foreign letters are always answered in the native language of the sender.

The second purpose of the Club is to coöperate with the American Cancer Society in cancer education. This they do by spreading "the gospel" of early cancer detection, by popularizing intelligent attitudes toward cancer, and by dispelling wrong attitudes or unjustified fears.

In a special way the Club has attacked cancer quackery. In 1957 2 women who were members of the Cured Cancer Club acted as "undercover" agents in coöperation with the Food and Drug Administration and went through the infamous Hoxsey Cancer Clinic. Their testimony was very valuable to the F.D.A.'s case in the subsequent court hearing. In passing, it may be of interest to note that the bill for "professional services" at the Hoxsey Clinic was in excess of $400 for each of the women.

A third function of the Club is to maintain a

DIRECTING NEW RESEARCH IN CANCER at Children's Hospital is Dr. Wellington Hung (right), Chief, Section of Endocrinology, Research Foundation. The American Cancer Society is supporting a study on "Hormone Synthesis of Normal and Malignant Thyroid Cells in Tissue Cultures" through a research grant of $21,998. Dr. Theodore Winship (left), senior attending pathologist at Washington Hospital Center and Children's Hospital, will be associated with Dr. Hung in this study. The grant is effective from March 1, 1963 through August 31, 1964.

Gift and Loan Closet. This "magic room" houses all kinds of patient needs and they are given or loaned as the case requires. Such articles include hospital beds, linen, wheel chairs, and even oxygen apparatus. Last year 169 articles were given or loaned to patients. This closet is referred to as a "magic room" because, no matter how much is dispensed from it, there always seems to be enough to take care of the next case. Keeping this closet stocked is indeed a major enterprise for the members. Some supplies are purchased from the Club's treasury, but, fortunately, many are donated by grateful patients, by altruistic individuals, and by charitable organizations, and even business firms. If this Gift and Loan Closet were the only activity of the Cured Cancer Club, the Club would be well worthy of praise.

A special activity of one member of the Club should be mentioned. This member, who has recovered from malignant melanoma, has given several donations of blood which, it is believed, have been helpful in keeping alive a patient with malignant melanoma.

Lastly, the Club has been able to give financial assistance in worthy cases, and has helped patients' families to obtain monetary loans to handle other medical expenses. Recently the Club learned that a young minister was in acute need of a little over $100 in order that his wife might have radioactive cobalt treatment for cancer. Without any bureaucratic "red tape" or delay, or social service investigation, the President of the Club, upon receiving this information from a pharmacist, immediately consulted her Executive Committee and advanced the money. When this was reported at the next meeting there was not a single dissenting voice, only accord for a worthy job well done.

Another example of financial assistance—the Club purchased an artificial limb for a student nurse who had lost her extremity because of cancer. By means of this appliance the student nurse was able to graduate and has become self-supporting.

There are other ways in which the Club has been helpful. Pen pals have been arranged, especially for children. Arrangements have been made for homemakers. Such assistance was given to a young woman, subject to hemorrhage, whose only help was her young child who came home after school and tried to be a nurse. The Club arranged for a homemaker during the day.

Requests for help come from many areas and from people in many different walks of life. One recent request was a telephone call from California for a competent surgeon. This the Club answered after consultation with a well known local surgeon.

It seems that no detail is overlooked to help the cancer patient. Even Christmas baskets are thoughtfully prepared and distributed. Last year 108 such baskets were distributed.

Here is a Club, which began with only 6 members less than 15 years ago, that has grown to be a social bulwark against the ravages of cancer in our community. It helps upwards of 200 persons a year, answers about a thousand letters a year, and maintains a person-to-person service that is warm, friendly, and ever-increasing in scope and magnitude. Over the years the Club has been guided by its most capable President, Mrs. Oliver S. Kern, and all of this work is done by her and her less than 80 members. In short, it matters not how great the problem nor how small, if it is related to the human side of cancer the Cured Cancer Club will do it.

Raymond A. Osbourn, M.D.

Medico in Malaya

WILLIAM S. McCUNE, M.D., F.A.C.S.

Clinical Professor of Surgery, George Washington University School of Medicine

SINCE THE HEROIC WORK of Dr. Thomas A. Dooley in Viet Nam and its enthusiastic continuation and extension by Dr. Peter D. Comanduras, Medico, Inc. (now Care-Medico) has provided sorely needed medical installations in many countries of the world. The efforts of these units are well known. They have not only been accepted gladly by all of the nations involved, but most of these countries have coöperated actively to facilitate the work of Medico and to make it more effective. Medical and surgical teams have been active in Laos, Cambodia, South Viet Nam, Hongkong, Malaya, Afghanistan, Gabon, Jordan, Haiti, Tanganyika, and, recently, Algeria. It is to be hoped that these efforts, in addition to meeting an important medical need, will also convey to the people at grass-root level a better understanding of American intentions throughout the world.

Although Mrs. McCune and I have been interested in Care-Medico for several years, it was through a personal conversation with Dr. Comanduras that we became interested in spending a month with a medical-surgical team in Malaya. Our contribution was an extremely small one compared with that of other doctors and nurses who have spent two years or more in the field at considerable personal sacrifice. The month of July seemed to be as good a time as any for us to be out of the country, since our daughters were all to be away from home during that period. After discussing the matter with Dr. Comanduras my wife and I found ourselves headed for the Orient almost before we had fully made up our minds to go.

We boarded a Northwest Orient plane in New York on June 29. After a seemingly endless flight through Anchorage, Tokyo, Hongkong and Singapore, we arrived in the capital of Malaya, Kuala Lumpur, on the morning of July 2. There we were met by Dr. Robert Lipe, the physician from Duke University in charge of the Kuala Lipis Medico Team. The airport of the capital was very modern and attractive. The city itself of 100,000 people had a distinct oriental atmosphere, with open markets, tropical sun, Chinese and Malayan shops, but also modern hotels and efficient service.

The Malayan Medico Team to which we were assigned was established in the town of Kuala Lipis in central Malaya approximately two years ago. This town of 20,000 people is completely surrounded by jungle and is reached by train or by an extremely winding mountainous road extending 125 miles north of the capital, Kuala Lumpur. The jungle at the very edge of the town is very dense and contains many monkeys and other wild animals, including a respectable number of tigers and poisonous snakes. The chief industries of Kuala Lipis are the growing and tapping of rubber trees and the cultivation of rice.

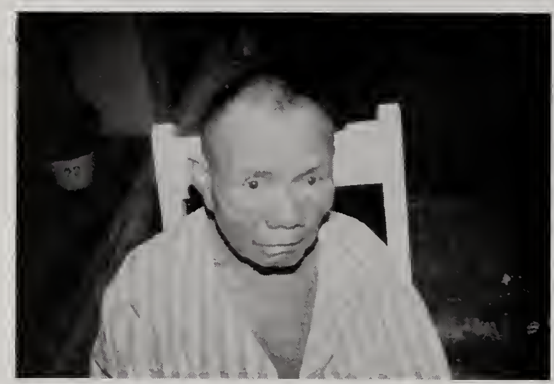
A few members of the Medico Malayan Team in Kuala Lipis. Left to right: MISS MONA SUNDVICK, head nurse of the surgical ward; MISS ANNE SHORT, operating-room nurse; MISS RUBY HILLS, nurse anesthetist; MRS. DORIS McCUNE; and DR. WILLIAM S. McCUNE.

We started the long 125-mile drive to Kuala Lipis in the Lark sedan which had been contributed to Medico by the Studebaker Corporation. The road, paved but extremely winding and mountainous, took us deeper and deeper through the jungle. Tall, dense foliage crowded into the road on both sides but allowed frequent glimpses of the mountain ranges which border the peninsula on the east and west.

After four and one-half hours we arrived in Kuala Lipis and were taken at once to the house leased by Medico where the two doctors, Dr. Lipe and Dr. Burt Slanger, live. This is also the house where all of the staff took their meals, prepared by a Chinese cook.

Here we met the other members of the Team. Miss Ruby Hills is an excellent anesthetist from Portland, Oregon. Misses Anne Short and Mona Sundvick are two efficient, trained nurses; the former is director of the operating room, scrub nurse and assistant, and the latter, chief nurse of the women's surgical ward, the children's ward, and the recovery room. We also met Miss Susan Shick, a Peace Corps worker in the laboratory.

We deposited our luggage at the Rest House, a small government hotel maintained in Kuala Lipis. Our room was large, furnished with a circulating fan and mosquito nets but no screens. It had an accompanying bath which looked out over the outdoor kitchen of the inn below.



Nodular leprosy of the face.

Kuala Lipis is a typical oriental town with open shops, many fruit stands, and large numbers of children, bicycles, compact cars and tropical heat. Many of the Malayan women are quite beautiful, and all Malayan, Chinese and Indian women wear brightly colored clothes. Hard labor in streets and buildings is carried out by men and women alike. The adults speak Malayan, Chinese or Indian, and some speak excellent English. The language barrier proved to be a real one but was not insurmountable because of the number of interpreters available. Schools are excellent. Kuala Lipis boasts a very good English school, Malayan school, Chinese school and Indian school. In all of these the children learn to speak English and many speak it quite well. The town is completely surrounded by jungle. Troops of monkeys played in the trees about the Rest House where we lived and the Medico house where we took our meals. Occasional tigers roam the jungles. One of our patients was attacked by a tiger only seven miles from the hospital and succeeded in killing it with a sheath knife. He then walked through the jungle to the hospital before receiving medical attention.

Medical care is provided by the government for all. Those who can afford to pay do so to a greater or lesser extent, although a large percentage of the people receive free care. Hospitals are provided at government expense in most cities, but because of the lack of a national medical school the number of available doctors, and particularly surgeons, is extremely small.

The greatest medical problem with which the government is faced is tuberculosis. There are also approximately 30,000 lepers in the Federation, of which number only about 3,000 have been hospitalized This is due, not to a lack of government effort, but to the reluctance of patients with leprosy to apply for the freely offered care in leprosariums. Malaria has been controlled to a large extent, although it is still a problem in the interior of the country. Amebic dysentery and leptospirosis continue to be public health problems.

The Kuala Lipis General Hospital where we worked is situated on a hill in the town surrounded by a nursing home, home for midwives in training, and a tuberculosis hospital in the process of being built. It contains 150 beds. Most of the wards are quite open, constructed as individual units, and are connected by a causeway. A large tuberculosis wing is always filled to overflowing. There is a small brick operating-room section and another small brick building which houses X-ray equipment. The hospital is provided by the government with one doctor, Dr. David Singh, a young Indian physician. In the operating room, besides Miss Short we had a Malayan orderly, Musa, and an Indian girl, Davy, who was trained to scrub and act as circulating nurse. The operating room was air-conditioned and had a relatively modern autoclave and an electric suction machine. All of the laundry of the hospital was done by hand and spread out on the grass to dry. The patients' toilets were out of doors in a separate building.

PEGAWAI PERUBATAN

Lining up for the daily Outpatient Clinic, Kuala Lipis General Hospital.

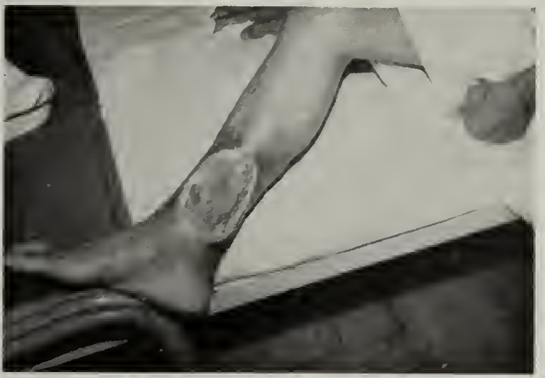
Most of the nursing was carried out by Malayan, Indian, or Chinese girls in training. Passing through a three-year course, they became known as assistant nurses at the end of their period of instruction. There were three trained nurses in the hospital, one, the Matron, an excellent supervisor, and two Assistant

Matrons, Sisters Lee and Lopez, on the surgical and obstetrical wards, respectively. In spite of this there was a marked shortage of trained nursing help, part of which was filled by Miss Sundvick of the Medico Team.

Most of the time of the three physicians was spent in the clinic, where approximately 250 patients were seen each day. Many of these were hospitalized, where they fell under the care of the doctor who had admitted them. Surgical patients were sent to the operating building, where they were seen by me and admitted if necessary. The operating-room equipment was adequate though not abundant. X-ray equipment and facilities were limited, and there was no fluoroscope. During the last two weeks of our stay the machine had broken down and we had no X-ray control in the treatment of fractures.

Transfusion was difficult, but we were able, with the help of Miss Shick, to give about eight transfusions during the month's stay. A roster of local police donors was drawn up toward the end of the month and proved helpful, although emergency transfusion took time because of the inaccessibility of donors and the lack of laboratory personnel. It was enlightening to discover, however, that such refinements are not always necessary in surgical practice. It was possible to maintain a fairly heavy operative schedule with surprisingly few complications. In almost all of the operations Miss Short was the only assistant, but a very good one. The anesthesia was excellent.

Between July 5 and July 26 we performed 70 operations, of which 33 were major procedures. A wide variety of procedures were included, such as vaginal hysterectomy, total hysterectomy, repair of a large vesicovaginal fistula, cesarean section, removal of substernal thyroids, colon resection, small bowel resection, tendon repair, skeletal fixation of fractures, superpubic prostatectomy, tracheostomy, tonsillectomy, burr hole exploration for subdural hematoma, subtemporal decompression, and the excision and grafting of many large tropical ulcers. Many patients had complicating conditions such as malaria, amebic dysentery, and anemia from hookworm disease. Wound infections were nonexistent except for contaminated lacerations. Infections responded dramatically to the use of pencillin and Chloromycetin®, the antibiotics most easily available. There were almost no postoperative complications. There were two deaths during this time, one, a woman with multiple reticulum-cell sarcomas involving the small and large bowel, and one a man with a severe head injury.

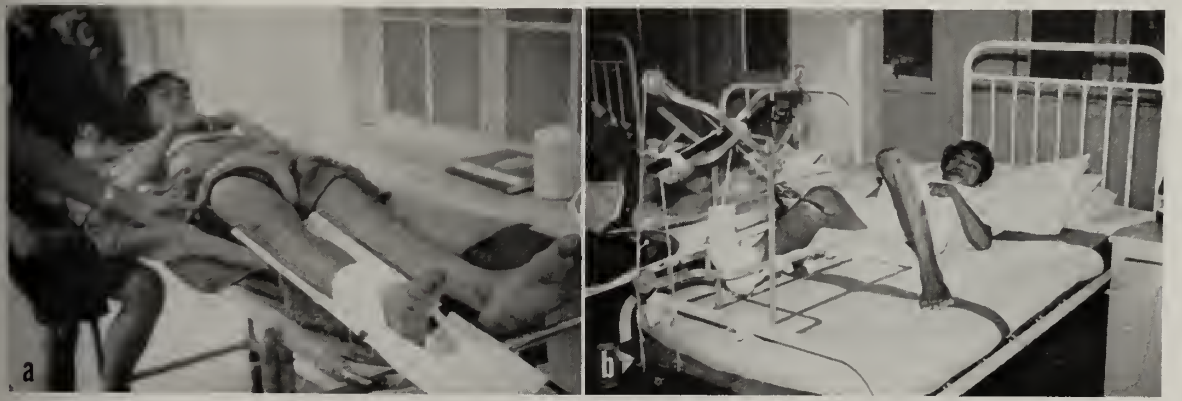


Large tropical ulcer before excision and grafting.

Mrs. McCune worked in the children's ward, feeding infants and giving general care. The infant mortality was rather high due to dysenteries and fevers of unknown origin.

Malaya and Communism

The peninsula of Malaya, lying between Singapore and Thailand in the oriental tropics, was for many years before the War a British Colony. It was quickly occupied by the Japanese at the beginning of World War II because of its strategic importance as the world's greatest producer of natural rubber. The Japanese occupation was cruel and hard. The



Rubber "tapper" with a transverse fracture of the femur: (a) emergency splint; (b) definitive skeletal traction.

only opposition given the invaders came from Communists in the jungles. Since the people coöperated with anyone who fought against the hated Japanese the Communists were at first accepted. After the War a definite concerted attempt was made by more than 70,000 well-led, well-armed Communists to take over the country completely. Rubber planters were killed and people intimidated until a state of emergency was declared by the Malayan government. With the aid of the British, who trained Malayan police, sent in troops, and helped to educate the people to their real danger, the Communists were completely and decisively defeated. The Communist Party has been outlawed, although it still exists as an underground organization. The Federation of the eleven Malayan States was established in 1957 and has been making rapid strides as a new nation during the past five years.

The Malayan penninsula is covered by dense jungle over three-quarters of its extent. The climate is hot and humid and except for a winter rainy season varies little from month to month. The wealth of the country lies in its rubber estates. Malaya is still by far the greatest producer of natural rubber in the world and in spite of the development of synthetic rubber has been able to compete in this commodity with success. Other industries include tin mining and the cultivation of rice. Nearly half of the population are Malays. These are attractive, pleasant, rather easy-going people who control the legislature and the government in each of the eleven states.

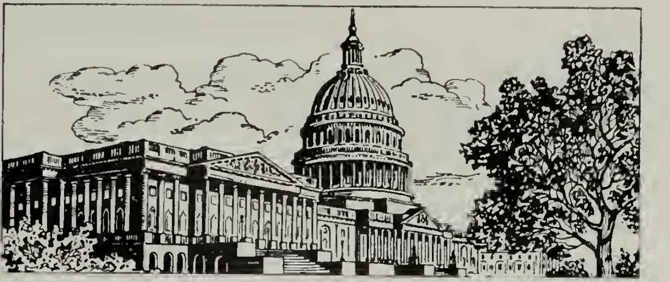
Nearly one-half of the population are Chinese who have now since the Emergency separated themselves almost completely from the Communists of the Chinese Mainland. They are extremely industrious and control a great deal of the business of the peninsula. Indians make up most of the remaining population. Many of them are rubber tappers and, like the Chinese, had until the past few years kept themselves separate from the other nationalities of the population. With the overthrow of Communism, however, they have coöperated well with the Malays and Chinese. There are also a few Europeans, Indonesians and people of other races in the Federation. The prevailing religions are Mohammedanism and Buddhism and, to a much lesser extent, Christianity.

The beautiful mountains and dense jungles surrounding Kuala Lipis were too tempting for us to overlook. Two nurses, Dr. Lipe, and I took a 50-mile overnight trip up the July river into the jungle. We traveled in outboard police boats which we often had to drag over the shallow rapids. Our destination, Fort Batau, was a police fort originally established in the battle against Communism but now serving as a center for the aboriginal villages which surround it. The aborigines are small, dark-skinned, friendly nomadic people who hunt with blowguns, subsist on a diet of wild rice, monkeys and other small animals, and have many interesting tribal customs. During the evening of our visit at the fort they gave a dance for us which was most entertaining. More civilized was a weekend which we spent at the beautiful island city of Penang off the northwest coast of Malaya. Its attractions include Chinese and Buddhist temples, a funicular railway up Penang hill, good hotels, and, last but not least, air-conditioned rooms.

The Malayan and Chinese people of Kuala Lipis could not have been more hospitable. We visited a Malayan home, were wined and dined in a Chinese home, and were entertained by various officials of the government. Our month in Kuala Lipis passed swiftly, and when the time came for us to leave we were convinced not only that our small effort but especially the much greater contribution of the other members of the Medico team was enthusiastically received by the people. Excerpts from the following letter received from Mr. Ong, one of the leading citizens of Kuala Lipis, expressed the sentiments of the people:

"Sept. 4, 1962. Dear Dr. and Mrs. William S. McCune: I received your airmail letter of recent date which had traveled 8,000 miles over mountains and oceans and thank you very much for your kind thoughts over us. The medical treatment you gave to my wife regarding the carbuncle on her back is kindness which both of us will always remember with gratitude. . . . I am wondering how the Malayan people could repay the kindness of the American Medico Team which has done and is still doing remarkable service to the sick.

"As soon as she is out I shall write to you again. Regarding my visit to your happy country I shall not hesitate to do so if Dame Fortune [i.e., the Social Welfare Lottery] is kind enough to give me a smile. Please give my regards to Mrs. William S. McCune. Yours sincerely, Ong Seong Seung."



NEWS & PERSONALS

Meetings

Dr. Albert M. Kligman, of Philadelphia, who is Professor of Dermatology at the University of Pennsylvania, will be a guest speaker at **Howard University College of Medicine,** April 18. He will give two lectures in the TB Annex Auditorium of Freedmen's Hospital. At 1:00 p.m. his subject will be "The Horny Layer—A Unique Human Achievement"; at 4:00 p.m. he will discuss "New Concepts of the Bacteriology of the Skin."

The U. S. Naval Medical School is conducting a **Seminar in Clinical Pathology** with lectures each Wednesday from 1:00 to 2:00 p.m. For May and June the following lectures are scheduled:

May 1: "The Clinical Importance of the Blood Factor D^u," Dr. Paul Schmidt, National Institutes of Health. Dr. Schmidt was originally scheduled for April 24 but will make his appearance a week later.

May 8: "The Analysis of Lipids and Steroids by Gas Chromatography in Clinical Chemistry," Dr. David Turner, Mt. Sinai Hospital, Baltimore

May 15: "The Chemical Structure of Hemoglobin," Dr. Makio Murayama, National Institutes of Health

May 22: "Disturbances of Renal Transport Mechanism," Dr. David Hsia, Children's Memorial Hospital, Chicago

May 29: "The Arthropod-borne Encephalitides," Dr. F. B. Gordon, Naval Medical Research Institute

June 5: "Current Hematologic Problems," Dr. William McFarland, Mt. Alto Veterans Administration Hospital

June 12: "Blood Grouping Tests in Relation to Medicolegal Problems," Dr. Leon N. Sussman, Beth Israel Hospital, New York City.

Members of the Medical Society have been extended an invitation to attend these lectures.

Members of the Medical Society of D. C. are cordially invited to attend the **165th Annual Meeting of the Medical and Chirurgical Faculty of the State of Maryland,** May 1, 2 and 3. Meetings will be held at The Alcazar in Baltimore.

The first scientific session, on Wednesday afternoon, will be devoted to 3 memorial lectures:

The Stokes Lecture: "Trends in the Control of Medical Practice," Dr. Edwin H. Lawson, New Orleans

The Trimble Lecture on Surgery: Dr. Eugene P. Cronkite, New York

The Finney Lecture: "A Follow-up Study of Surgically Treated Peptic Ulcer over 46 Years," Dr. Harold D. Harvey, New York

"Steps to the Moon" is the subject of a panel discussion for Wednesday evening, when Dr. George M. Knauf, Deputy Director, Office of Manned Space Flight, will be moderator.

Two memorial lectures will be featured in the afternoon program, May 2. Dr. John Rock, of Brookline, Mass., will give the Hundley Lecture on Gynecology, and Dr. Edward L. Bortz, of Philadelphia, the Coggins Lecture on Geriatrics. The Presidential Dinner will be held in the evening of the same day.

Friday morning will feature a panel discussion on ' The Business Side of Medicine." Participants will include 2 members of the District Medical Society, Dr. Joseph F. Sadusk, Jr., of George Washington University, and Dr. Henry P. Laughlin, of Chevy Chase, Md.

There is no registration fee. A detailed program may be secured from Dr. J. Morris Reese, 1211 Cathedral Street, Baltimore 1, Md.

A Seminar on Selected Lesions of Breast and Ovary is to be conducted at the U. S. Naval School of Hospital Administration, National Naval Medical Center, in Bethesda, Md., May 4, at 2:00 p.m. This Seminar is sponsored by the Washington School of Pathologists, the Pathology

Section of the Baltimore City Medical Society, and the Southeastern Region of the College of American Pathologists.

Seminar Histologic Slide Sets on Selected Lesions of Breast and Ovary may be ordered. The price is $8.00 per set (12 cases). Please make check or money order payable to Washington Society of Pathologists, Inc., and mail to Mrs. Catherine V. Porter, Laboratory of Pathology, National Cancer Institute, Clinical Center, Room 2-A-29, Bethesda, Md.

Sibley Hospital is planning its usual **Medical Alumni Day** for Thursday, May 23. The morning will be devoted to scientific papers. A dance in the evening will be the concluding social event. Physicians are asked to watch for an announcement of the program.

Boards & Committees

The Executive Board met February 25 at Society headquarters. Dr. W. LeRoy Dunn presided. Those present were: Drs. Karl C. Corley, Edward W. Nicklas, Duane C. Richtmeyer, J. Spencer Dryden and Raymond T. Holden. Also present were Drs. J. Rogers Young and Grace H. Guin. Absent were Drs. Victor R. Alfaro and C. Willard Camalier, Jr.

Finance Committee: On recommendation of this Committee it was voted to add the Vice Chairman of the Executive Board to the Finance Committee; to refer to the Society's new Insurance Committee responsibility for reviewing the Employees' Pension Plan, with the request that recommendations be made concerning this Plan; and that the allotment of dues per member for the Annals not be listed separately in future Society billings.

Committee Meetings: The Secretary reported that the following meetings had been held since the Board last met:

February 1 Review Board for Prepaid Medical Care Benefits
8 Public Information and Education
13 House Committee
15 Polio Committee
18 Occupational Health—Claims Managers' Association
18 Finance Committee
19 Grievance Committee
20 Board of Credentials
20 Postgraduate Education

Medical Journal Committee: In view of some confusion that has arisen concerning this Committee and its relationship to the Annals, it was agreed that the name be changed to Medical Journal Exchange Committee.

House Committee: On recommendation of the House Committee, it was voted to purchase a multiperil policy for a period of 3 years to replace 5 individual policies now in force; also to purchase a boiler insurance policy for both 1710 and 1718 M Streets. A progress report in reference to plans concerning the present Society headquarters was read by the Secretary.

Workmen's Compensation Report: Dr. J. Rogers Young reported on the completion of an updating of the present compensation schedule in which a substantial number of fees had been increased and none had been decreased. It was voted that this present updating be approved and that it be published together with a copy of the revised Longshoremen's and Harbor Workers' Compensation Law. It was also voted that the Arbitration Committee, under the present compensation program, be retained, as is, with no change in procedure, i.e., that the 3 members of the Medical Society be a Subcommittee of the Committee on Occupational Health serving with 3 members from the Washington Claims Managers' Council.

AMPAC of D. C.: Dr. Richard T. Sullivan was named Chairman of the American Medical Political Action Committee of the District of Columbia.

Honoraria for Speakers: This matter was referred back to the Program Committee of the Annual Scientific Assembly for specific recommendations as to which speakers should be paid an honorarium.

Committee on Insurance: In accord with its previous action, the Executive Board created a Committee on Insurance to review the Life, Health and Accident and Liability insurance programs now sponsored by the Society; to advise on insurance and pension plans for Society employees; and to carry on such liaison with private insurance carriers as is necessary to these activities. Dr. Richard H. Todd was named Chairman of this new Committee.

Water Pollution: In response to a report from the Committee on Public Health that any activities on the part of the Society in reference to water pollution would prove of doubtful value, it was voted that the Committee on Public Health be requested to follow activities now carried on by others in reference to control of water pollution, to keep the Executive Board informed of such activities, and to recommend positive actions that might be taken by this Society upon which statements could be based and conveyed to the public from time to time, pointing out sound and constructive steps to be taken.

Resolution from AMA on Private Insurance Carriers: This resolution, adopted by the House of Delegates of the AMA and sent to each Medical Society for action, was referred to the Committee on Public Policy for study and report back to the Board.

Applicants for Membership: Applicants for membership in the Medical Society recommended by the Board of Credentials were approved for a 1-year probationary period.

Active Members

Leo D. Amorosi, 2121 Pennsylvania Avenue, N.W.
Heinz O. Bauer, 8601 Manchester Road, Silver Spring, Md.
Angelo D'Agostino, Georgetown University Hospital
Sylvia Alicia Fuertes, Freedmen's Hospital
Thomas Anthony Mathews, 2025 Eye Street, N.W.
Helen Johns Ossofsky, D. C. General Hospital
Richmond Shepard Paine, 2125 13th Street, N.W.
Domenic Eugene Sabatini, Washington Hospital Center
Melvin D. Small, 3800 Reservoir Road, N.W.
Alfred Suarez, 1726 Eye Street, N.W.
Donn Lloyd Tippett, 3000 Connecticut Avenue, N.W.

Associate Member

Arthur Ruskin, 9602 Glencrest Lane, Kensington, Md.

Resident-Intern Member

Barrington Benton Barnes, 53-55th Street, S.E.

The Executive Board also acted on a number of individual requests for change in membership status and for waiver of dues.

Joint Board of Science Education: It was voted to allot a contribution of $100 toward this project, as has been done in the past.

S.A.M.A. Regional Meeting: It was agreed to participate in the sponsorship of this regional meeting on receipt of further details concerning the obligations which would be included in this co-sponsorship.

General News

Georgetown University School of Medicine has named Dr. Walter C. Hess, Acting Dean of the School of Medicine, to serve in that capacity until the appointment of a successor to Dean Hugh H. Hussey, who resigned, effective March 1, to assume the position of Director of the Division of Scientific Activities of the American Medical Association. Dr. Hess was Professor of Biochemistry and Chairman of the Department from 1946 until 1960, when he assumed the position of Associate Dean of the School of Medicine.

Georgetown also announces the promotion of Dr. Baldev R. Bhusary from Associate Professor of Anatomy to Chairman of the Department, effective July 1. Dr. Bhusary received his doctorate in dental surgery from the University of Bombay. He joined the faculty of Georgetown in 1957 as Assistant Professor of Anatomy.

Georgetown has appointed Dr. Thomas E. Macnamara as Professor of Anesthesiology and Director of the Department in the University Hospital. Dr. Macnamara, who is a graduate of Glasgow University, Scotland, was a member of the faculty of Georgetown in 1957. For the past 2 years he has been on the faculty of Harvard Medical School, in the Department of Anesthesiology.

Dr. Robert F. Dyer and Dr. Joseph F. Dyer, Jr., have been appointed to fill vacancies on the D. C. Board of Police and Fire Surgeons.

Both are Washingtonians and engaged in private practice. Dr. Robert Dyer is a graduate of George Washington University School of Medicine, Class of 1955, and has had postgraduate training in internal medicine at Harvard University. He is on the teaching faculty of George Washington University as Associate in Medicine. A veteran of World War II and the Korean Occupation, he presently holds the commission of Major in the U. S. Army Reserve. He is an Active member of the D. C. Medical Society.

Dr. Joseph Dyer received his degree in medicine from Howard University College of Medicine in 1944 and is on the teaching staff of the College as Clinical Assistant Professor of Medicine. He is also a veteran of the U. S. Army Medical Corps.

The establishment of the **National Institute of General Medical Sciences** was announced in February by Dr. Luther L. Terry, Surgeon General of the Public Health Service. This brings the total Institutes to 9. Formerly the Division of General Medical Sciences, it was established in 1958 to help meet the increasing requirements of the NIH programs of grants to non-Federal medical schools, universities, and other medical institutions. The new Institute was authorized by Congress in October 1962. It will support programs of research grants, of training for investigators, and will make fellowship awards.

Dr. Clinton C. Powell, Director of the Institute, served as head of the Division of General Medical Sciences since August 1962. He received his degree in medicine from Boston University in 1944. Following service with the U. S. Navy as a medical officer in 1945–46, he was commissioned in the Public Health Service.

The **Northern Virginia Society of Internal Medicine** elected officers on January 29. They are:

Dr. Bertram Snyder, *President-elect*; Dr. S. H. Williams, *Secretary*; and Dr. Robert Guillaudeau, *Treasurer*.

Dr. John Watson assumed the office of President for the coming year.

Dr. Snyder and Dr. Watson are Associate members of the D. C. Medical Society.

The National Registry of Deaths from Mycetism maintains a file of deaths attributed to ingestion of wild mushrooms (1957 to date). Physicians are requested to send notice of all such deaths, including age, sex, date and locality, to Dr. Robert W. Buck, Secretary, Massachusetts Medical Society, 22 The Fenway, Boston 15, Mass.

"Medical Care Financing and Utilization" is the first of a new Health Economics Series being published by the Public Health Service. The major sections deal with public and private expenditures for medical care, voluntary health insurance, hospital finances, and the utilization of hospital services, physicians' and dentists' services. It is intended to serve as a reference for students of health economics and medical care administration, as well as for administrators of health and medical programs and health insurance.

The source book contains 168 tables and 24 charts, with trend data tabulated for 15 to 30 years. It is for sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., at $1.50 a copy. Single copies may be obtained free from the Public Health Service, Washington 25, D. C.

Mr. C. Joseph Stetler, Director of the Legal and Socioeconomic Division of the American Medical Association, is resigning this post to join the Pharmaceutical Manufacturers' Association, July 1, as Executive Vice President and General Counsel.

Personals

Dr. Hugh H. Hussey, immediate past Dean of Medicine at Georgetown University School of Medicine, was tendered a farewell reception, February 25, by the Reverend Edward B. Bunn, S.J., President of the University, and the Reverend Joseph F. Cohalan, S.J., Vice President for Medical Center Affairs. Mrs. Hussey was also honored at the reception, which was held in the Copley Lounge. Father Bunn spoke briefly, and Dr. Walter C. Hess, Associate Dean of Medicine, on behalf of the Executive Faculty, presented the Husseys with a silver desk ornament which had been inscribed by the faculty members. Over 300 faculty members and guests were present at the gathering.

G. H. Cues, a bulletin published monthly by Georgetown University Hospital, traced the medical, teaching, and administrative career of Dr. Hussey in an affectionate farewell editorial which appeared in the January 1963 issue. The same issue paid charming tribute to Mrs. Hussey, who was revealed as the outstanding newsgatherer and contributor to *G. H. Cues*. The cover shows an excellent photograph of Dr. Hussey.

Dr. Hussey began his new duties in Chicago, March 1, where he is Director of Scientific Activities for the AMA.

The appointment of **Lt. General Leonard D. Heaton** as Surgeon General of the Army has been extended for 2 more years by President Kennedy. The extension will date from June 1.

Major General Oliver K. Niess, Surgeon General of the Air Force, received a testimonial award in February from the American College of Chest Physicians at a scientific meeting in New Delhi, India.

Dr. Warren D. Brill is a member of the Class of 1963 on whom fellowship was bestowed by the American College of Physicians at convocation ceremonies, April 4, in Denver, Colo. Other Fellows elected for this honor from the Washington area were listed in the February issue of the MEDICAL ANNALS.

Obituaries

Frederick Scott Avery, M.D.

(1876–1963)

Dr. F. Scott Avery, who had practiced medicine in the Washington area for 45 years, died, January 16, 1963, at Georgetown University Hospital. He lived at 309 North George Mason Drive, Arlington, Va.

Dr. Avery was born in Lexington, Michigan, July 14, 1876, to Daniel S. and Mary Scott Avery. After attending the public schools of Lexington and Alma College in Alma, Michigan, he taught in his home state for 7 years and was principal of 2 high schools.

Appointed a Federal clerk for the Tenth Census, Dr. Avery came to Washington in 1900. He enrolled in George Washington University School of Medicine and graduated in 1908. He began his practice the year of his graduation, with offices during the first 7 years in Georgetown. He later moved his offices to 1623 Massachusetts Avenue, N.W., where he continued in practice until his retirement in 1953.

Dr. Avery had been a Life member of the Medical Society of the District of Columbia since 1950, and was a member of the American Medical Association and the George Washington University Medical Society. He belonged to the Washington Golf and Country Club and the Association of the Oldest Inhabitants of the District of Columbia.

Surviving him are his wife, Mrs. Ellen Parke Avery, and a son, Frederick Scott Avery, Jr., who also resides in Arlington.

Karl H. Langenstrass, M.D.

(1886–1962)

Dr. Karl H. Langenstrass, an Active member of the D. C. Medical Society, died at St. Elizabeths Hospital, October 5, 1962.

Dr. Langenstrass was born in Ilsenburg, Germany, July 16, 1886. He graduated in medicine from the University of Jena, Germany, in 1917.

He practiced in Germany until 1923. In 1924 he came to the United States for postgraduate training at the General Hospital in Passaic, N. J. The next 6 years he was associated with the State Hospital in Allentown, Pa., and from 1930 until his death he was on the staff of St. Elizabeths Hospital in Washington, D. C. He became a citizen of the United States in 1929.

He was elected to Associate membership in the Medical Society of the District of Columbia in 1931, and to Active membership in 1945. He was also a member of the American Medical Association, the American Psychiatric Association, the Southern Medical Association, and the Association for Research in Nervous and Mental Diseases.

He leaves his wife, Dr. Ethel H. Friedman, also on the staff of St. Elizabeths Hospital, Washington, D. C.

Warren Seymour Wilkins, B.S., M.D.

(1903–1962)

Dr. Warren S. Wilkins, Washington pathologist, died, December 29, 1962, at his home, 3918 Clay Place, N.E.

Dr. Wilkins was born in New York City, August 18, 1903. He received the degree, Bachelor of Science, from Morgan State College in 1942. He graduated in medicine from Howard University in 1945 and interned at Freedmen's Hospital the following year.

Dr. Wilkins served on the faculty of Howard University College of Medicine as Assistant Professor of Pathology from 1949 to 1953, when he left Washington to become Director of Laboratories at Norfolk (Va.) Community Hospital. A year later he returned to Washington and again became affiliated with Howard University as Assistant Professor of Pathology. He was also pathologist to Freedmen's Hospital and Assistant Director of Clinical Laboratories.

He was elected to Active membership in the Medical Society of the District of Columbia in 1955. He was a member of the Medico-Chirurgical Society of D. C. and the Virginia Society for Pathology and Laboratory Medicine.

Surviving him are his wife, Mrs. Evelyn H. Wilkins, and a son, Warren S. Wilkins, Jr., of the home address.

Ella Roy Fales, M.D.

(1874–1963)

Dr. Ella Roy Fales, an Associate member of the D. C. Medical Society, died, January 10, 1963, at the Washington Sanitarium. She lived at 1914 Grace Church Road, Silver Spring, Md.

Born in Huntsville, Alabama, August 9, 1874, to William H. and Mary Roy House, Dr. Fales came to Washington with her family when she was 14 years of age. She attended the District public schools and was graduated from old Central High School in 1894. She was a graduate (1898) from Washington Normal School and in 1900 was awarded her medical degree from National University, now a part of George Washington University.

She taught in District elementary schools until her marriage in 1901 to Dr. Warren D. Fales. For more than 30 years she was a Medical Officer for the Veterans Administration, from which she retired in 1947. She received a citation for outstanding service in evaluating ex-servicemen's disabilities for VA benefits.

Dr. Fales was active in a number of patriotic and civic societies. She was District State Regent of the Daughters of American Colonists in 1948. She also had held offices in the Daughters of the American Revolution, Daughters of Colonial Wars, and the United Daughters of the Confederacy. She was a 50-year member of the Order of the Eastern Star and a member of the District Chapter of the PEO Sisterhood.

Dr. Fales was elected to Associate membership in the D. C. Medical Society in 1945. She was also a member of the American Medical Women's Association, the George Washington University Medical Society, the Women's City Club, and the Political Study Club. Her church membership was in St. Paul's Lutheran Church.

Dr. Fales' hobby was travel; she had toured every state in the Union and many foreign countries.

Her husband died in 1948. She is survived by their 3 sons, Warren D. Fales, Jr., of the home address, and Bruce and John Fales, of Silver Spring, Md.

Treatment of Inoperable Prostatic Cancer—Herbst

(Continued from page 129)

tion of the adult male should include a rectal examination, with particular interest in the status of the prostate. Any lack of uniformity and consistency of a prostate gland calls for the appraisal of a urologist. It is of more than passing interest that the Walter Reed Army Medical Center, where rectal examination is emphasized in physical examinations, has accomplished an operability of over 50 per cent in prostatic cancer patients. This is most impressive when it is realized that in the average general practice operability does not exceed much more than 5 per cent. This demonstrates the urgent need to stress the importance of always doing a rectal examination as part of every physical examination of the adult man.

D & C Complicated by Uterine Perforation—Kushner and Dill

(Continued from page 131)

Summary

Perforation of the uterus during curettage is not a rare occurrence despite the use of all known safeguards. The incidence approaches 1 such accident in 700 operations. In the childbearing group of patients this complication may be the etiologic factor in infertility by causing pelvic infection or trauma to the uterus necessitating hysterectomy.

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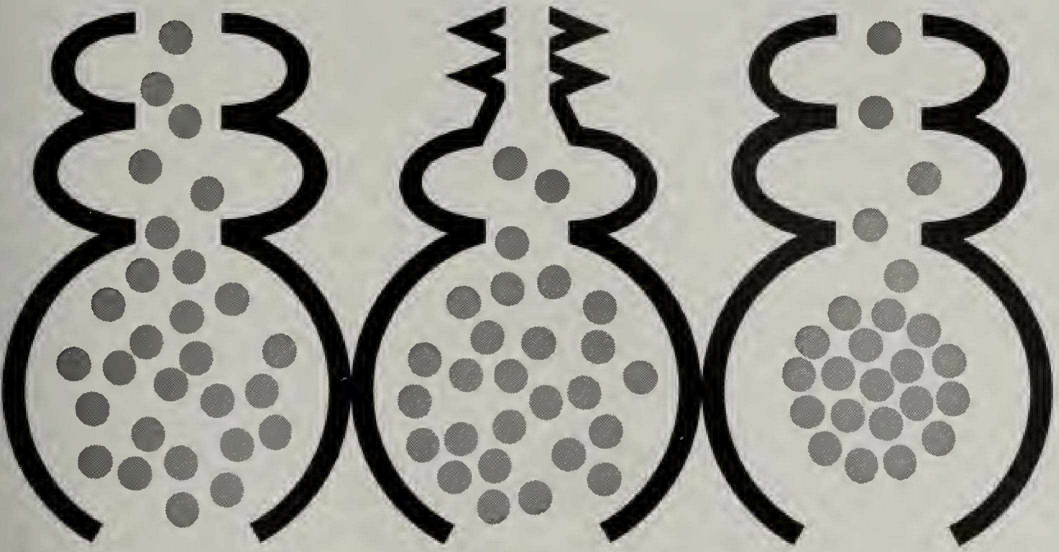

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1. Janssen, P. A. J., and Jageneau, A. H.: A New Series of Potent Analgesics: Dextro 2:2-Diphenyl-3-Methyl-4-Morpholino-Butyrylpyrrolidine and Related Amides. I. Chemical Structure and Pharmacological Activity, J. Pharm. Pharmacol. 9:381-400 (June) 1957.
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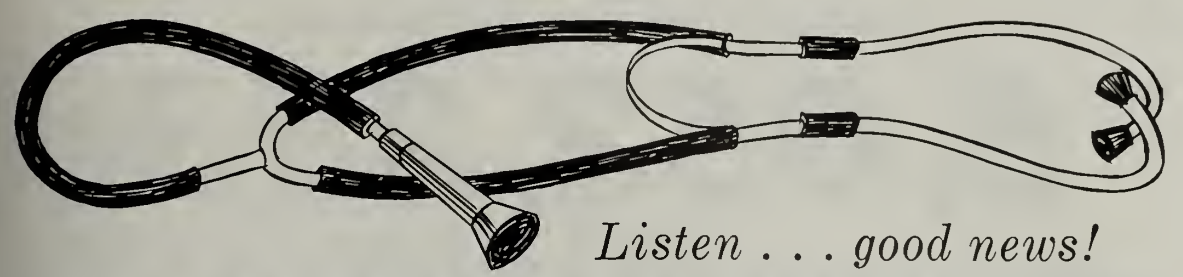

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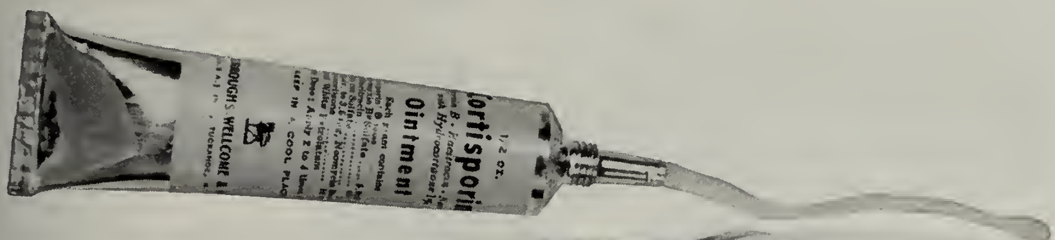

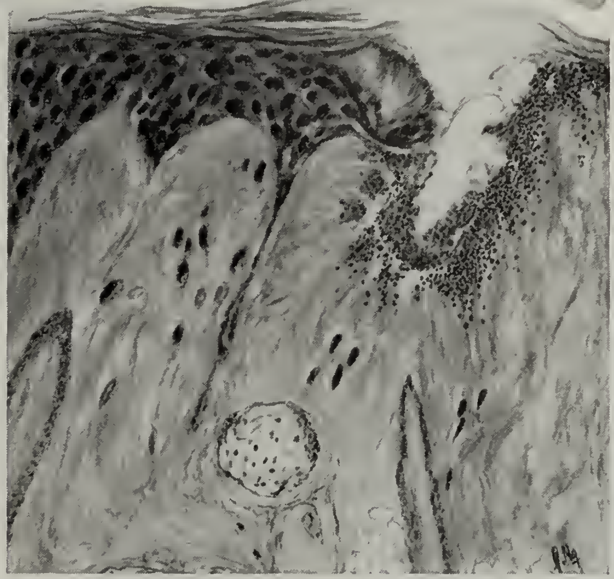

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9	ABBEY	8.00-12.00	12.00	14.00-16.00	41	TRAYMORE (HEADQUARTERS)	(NO ROOMS AVAILABLE)		
58	AMBASSADOR*	8.00-20.00	—	10.00-22.00	16	CAROLINA CREST	7.00- 8.00	9.00	10.00-12.00
14	CHALFONTE-HADDON HALL*	8.00-12.00	—	11.00-30.00	8	COLTON MANOR*	9.00-15.00	—	14.00-20.00
	(Woman's Auxiliary Headquarters)				26	COLUMBUS*	—	10.00	10.00
44	CLARIDGE	10.00-21.00	—	14.00-25.00	45	EASTBOURNE*	7.00- 9.00	10.00	11.00
61	DEAUVILLE	14.00-18.00	—	16.00-24.00	27	FLANDERS*	6.00- 7.00	8.00- 9.00	10.00-14.00
49	DENNIS*	9.00-14.00	—	12.00-24.00	35	JEFFERSON*	7.00- 8.00	10.00	10.00-12.00
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NATIONAL AND REGIONAL MEETINGS

April 21–24: 11th Annual Meeting, American College of Obstetricians and Gynecologists. Statler-Hilton Hotel, New York. Address: Craig W. Muckle, 1806 Garrett Road, Lansdowne, Pa.

May 1–3: Annual Meeting, Medical and Chirurgical Faculty of the State of Maryland. The Alcazar, Baltimore. Address: Dr. J. Morris Reese, *Chairman*, Committee on Program and Arrangements, 1211 Cathedral Street, Baltimore 1, Md.

May 9–11: Annual Scientific Assembly, Virginia Academy of General Practice. Hotel Jefferson, Richmond. Address: Mrs. Louise B. Greiner, *Executive Secretary*, 4205 Dover Road, Richmond 21, Va.

May 11: Alumni Day, Eye Department, Washington Hospital Center. Washington Hospital Center, Washington. Address: Dr. L. Conner Moss, Program Chairman, 1705 Rhode Island Avenue, N.W., Washington 6, D. C.

June 13–16: Annual Meeting, American Therapeutic Society. Shelburne Hotel, Atlantic City. Address: Dr. Oscar B. Hunter, Jr., *Secretary*, 915 19th Street, N.W., Washington 6, D. C.

June 13–17: Annual Meeting, American College of Chest Physicians. Ambassador Hotel, Atlantic City. Address: Mr. Murray Kornfeld, *Executive Director*, 112 East Chestnut Street, Chicago 11, Ill.

June 16–20: Annual Meeting, American Medical Association. Convention Hall and Traymore Hotel, Atlantic City. Address: Dr. F. J. L. Blasingame, *Executive Vice President*, 535 North Dearborn Street, Chicago 10, Ill.

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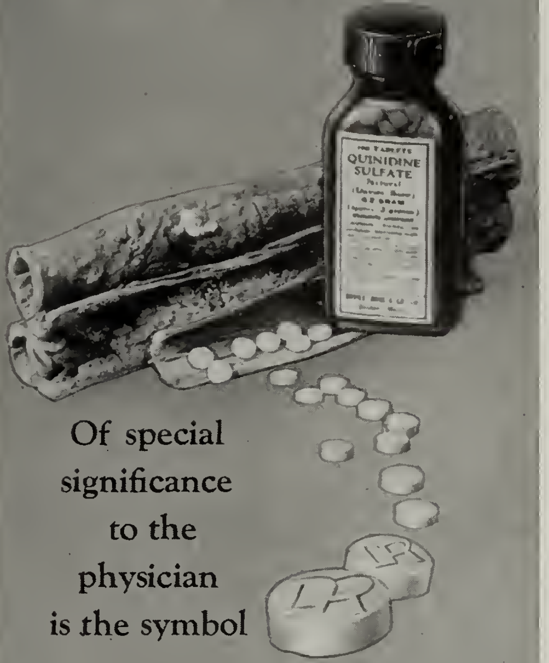

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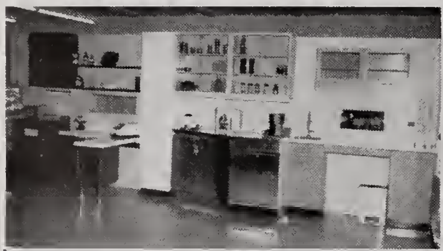

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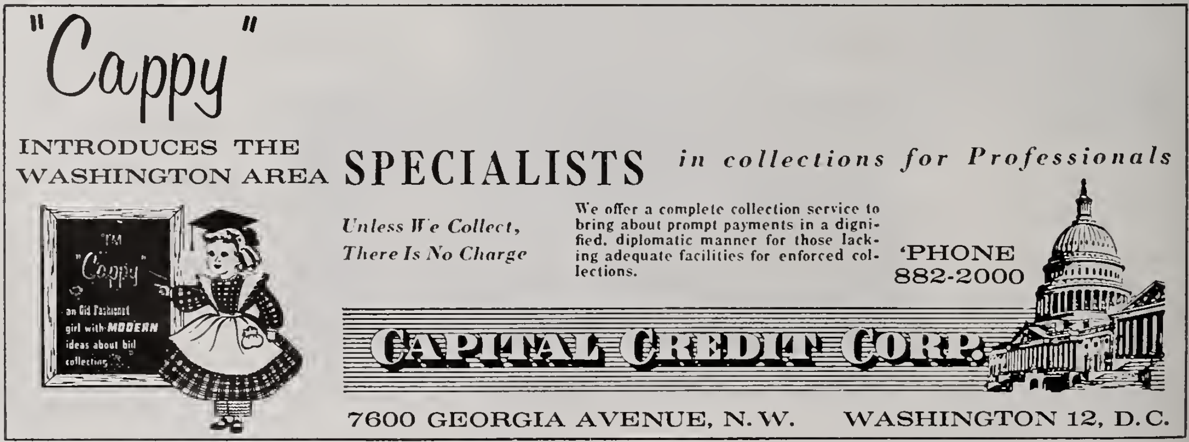
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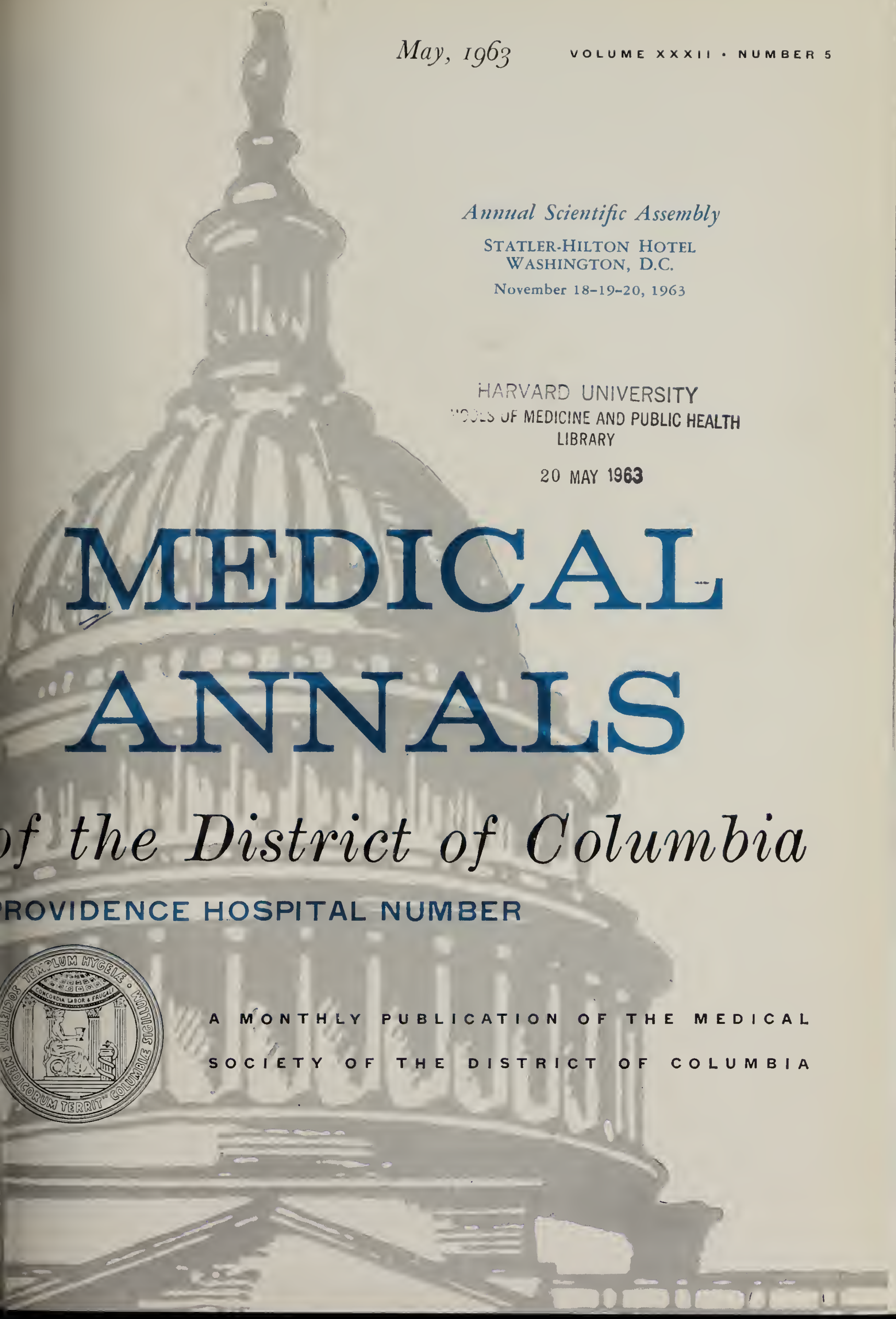

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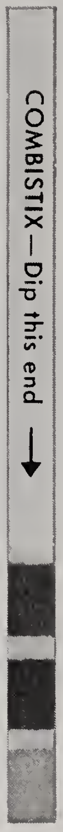

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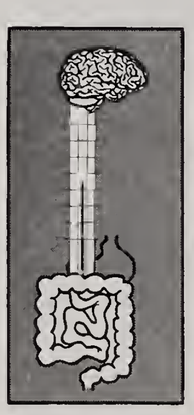

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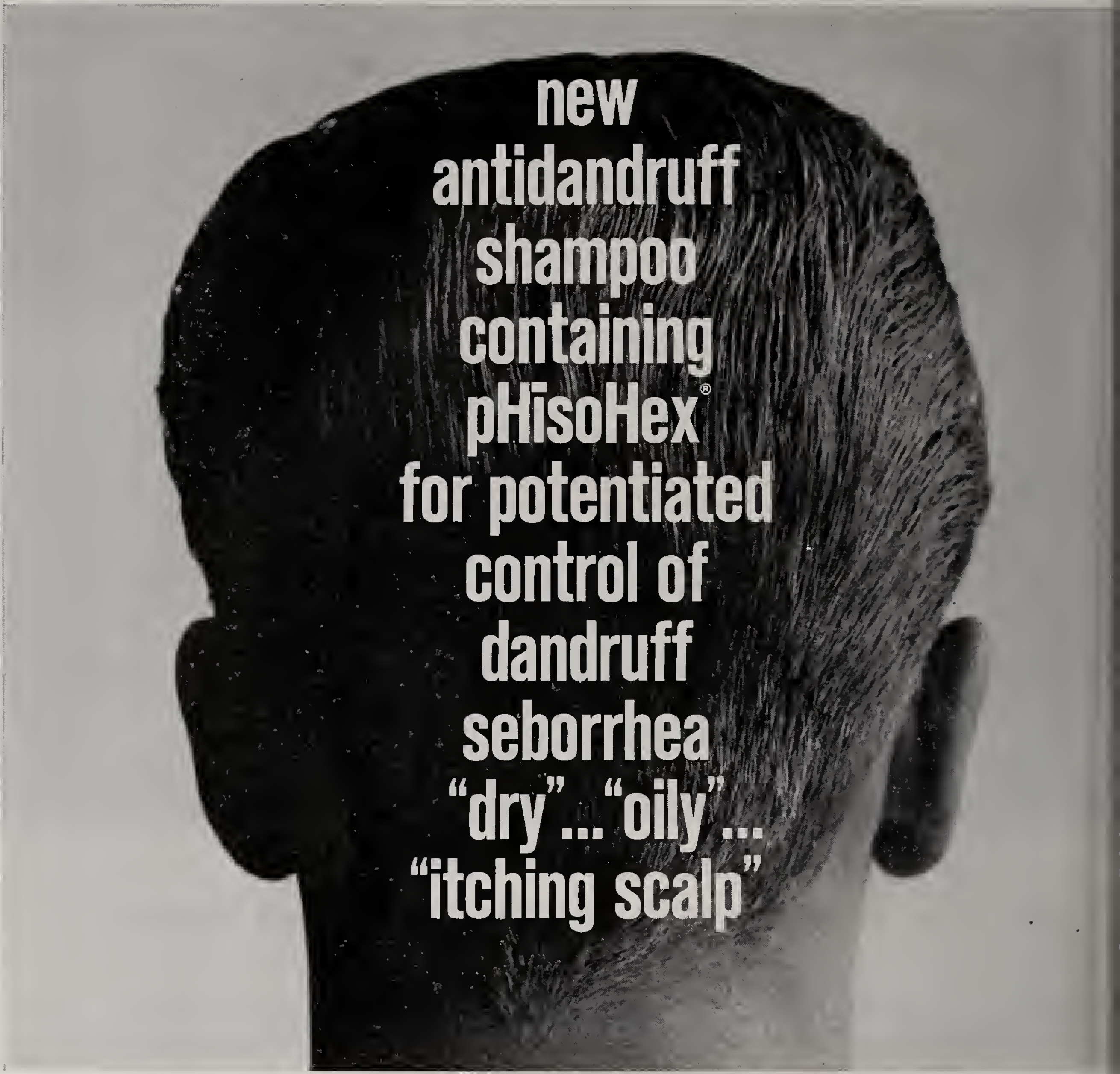

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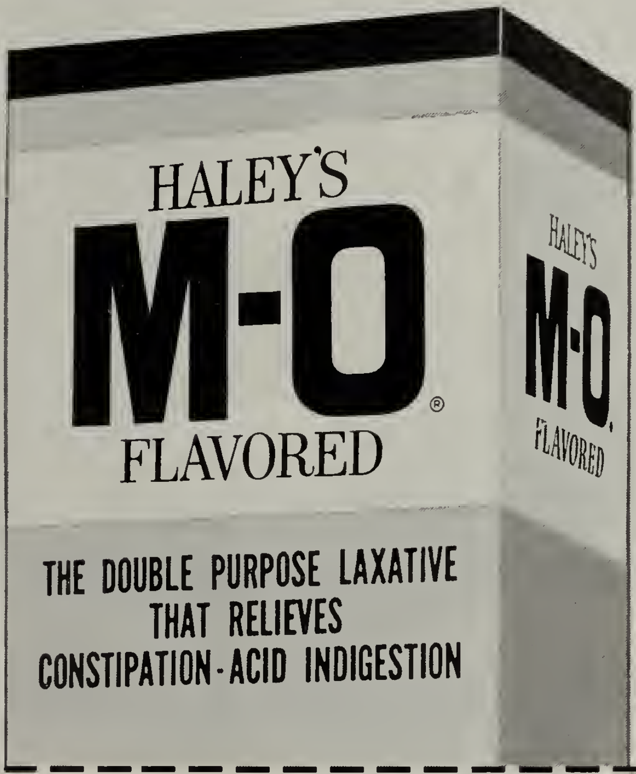
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*AMA Council on Foods and Nutrition: The Regulation of Dietary Fat, *JAMA* 181:411-423 (August 4, 1962).

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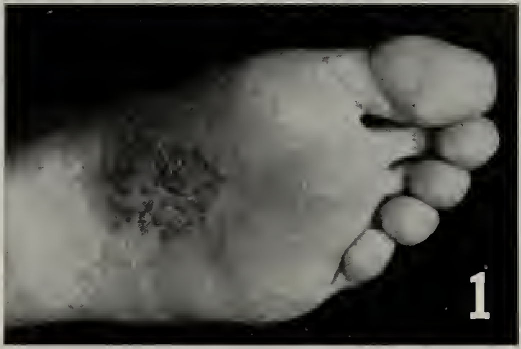
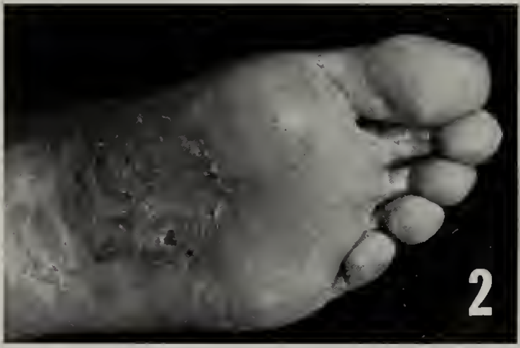
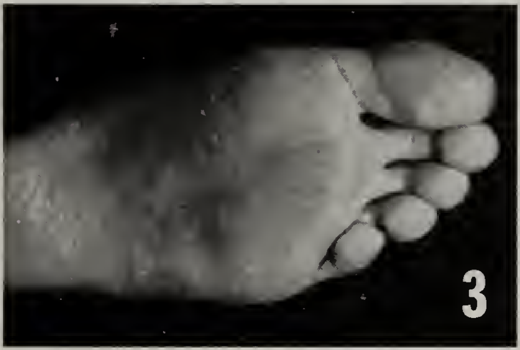
1 Plantar tinea pedis before therapy.

2 After two weeks of therapy.

3 Six weeks later, skin essentially normal (two weeks after termination of therapy).







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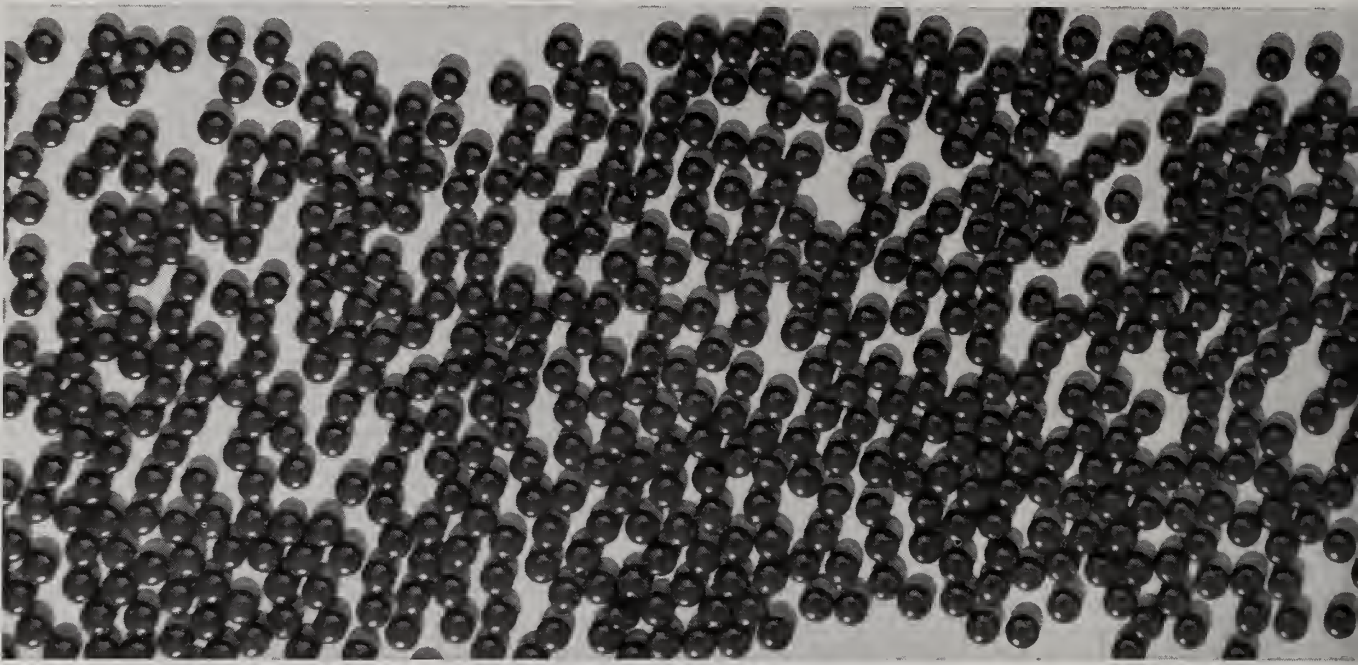

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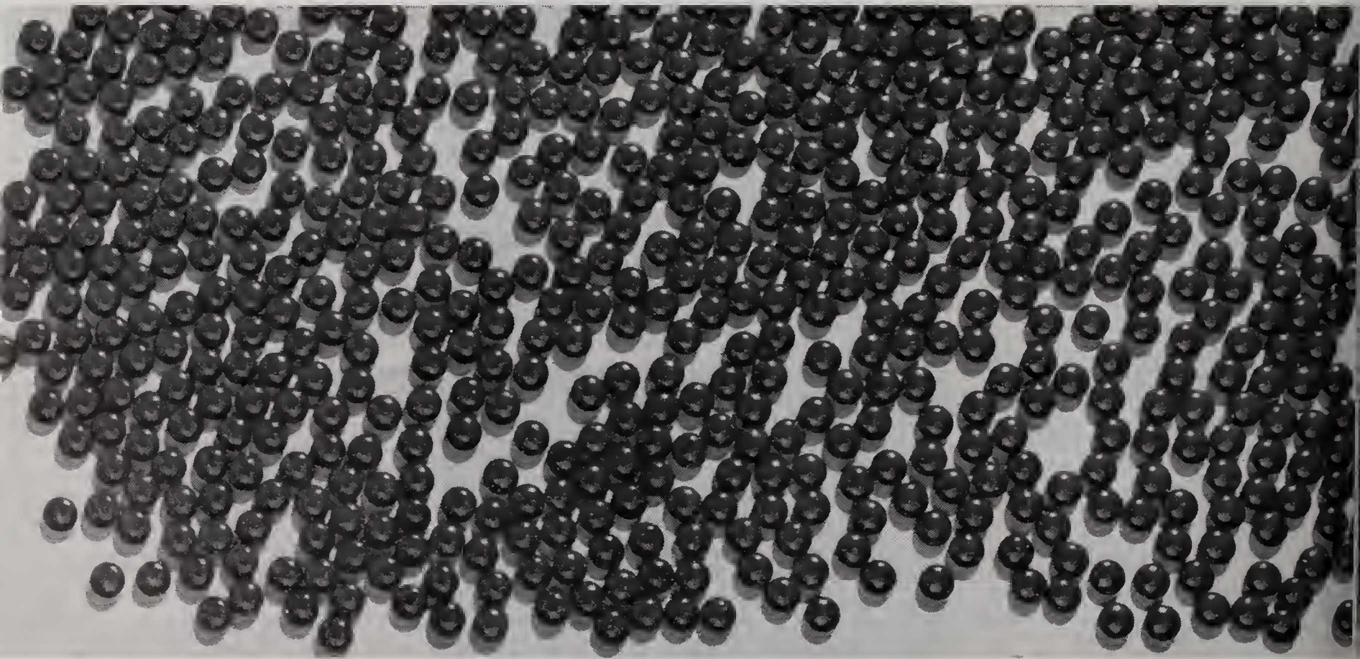

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THIS IS THE FIRST of a third series of special numbers of the MEDICAL ANNALS, the scientific material for which is supplied by medical institutions and scientific organizations in the Washington Metropolitan Area. For the PROVIDENCE HOSPITAL NUMBER the Editorial Board is indebted to Dr. Kenneth L. McCoy, Director of the Department of Pathology of Providence Hospital, who secured the papers which appear in this issue.

The Immediate Complications of Gastrectomy

A Twelve-year Review of Early Postoperative Complications in Ulcer Surgery*

FRANCIS X. CARILLO, M.D.

Assistant Attending Physician, Department of Surgery, Providence Hospital, Washington

IN RECENT YEARS many centers have attempted to avoid the complications associated with subtotal gastrectomy by substituting procedures which are technically more simple and which circumvent the possible risks attendant upon the inverted duodenal "stump." Short-term results with the pyloroplasty and vagotomy and with the resurrected posterior gastroenterostomy and vagotomy are encouraging. It is very evident, however, that until we have an adequate number of 15-year follow-ups most surgeons are not going to abandon the standard two-thirds to three-quarters gastric resection at the risk of increasing the incidence of recurrent and marginal ulcers.

Moreover, in most cases of hemorrhage and pyloric obstruction, because of scarring or inflammation these lesser procedures are not suitable. The Billroth I resection (gastroduodenostomy) in selected cases is an excellent choice, but in many patients, in order to effect an anastomosis without tension, the surgeon "skimps" on his resection and leaves behind too many acid secreting glands. To circumvent this problem, antrectomy and vagotomy coupled with either gastroduodenostomy or gastrojejunostomy has enjoyed limited popularity. The majority of surgeons in a general hospital practice prefer the more radical resection, pending conclusive long-term results of the lesser procedure.

It seems that for several more years we shall be saddled with the "standard" subtotal gastrectomy. It behooves us to analyze the following factors: the morbidity of this operation, how to avoid the pitfalls, and how to take the proper corrective measures for these complications.

At Providence Hospital during the past 12 years 657 definitive operative procedures for peptic ulcer were performed. There were 92 significant postoperative complications (14 per cent) and 15 hospital deaths in this series. The 2.3 per cent hospital mortality compares favorably with results from other groups. The disturbing factor is that in recent years the number of complications, contrary to the normal expectation, has increased.

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* Material from the first 6 years of this series was used as the basis of a Scientific Exhibit presented at the 26th ANNUAL SCIENTIFIC ASSEMBLY of the Medical Society of the District of Columbia in 1957. The exhibit was prepared by Drs. Philip A. Caulfield, Howard S. Madigan, Francis Carillo and Herbert E. Schneider.

The complications following gastrectomy are of 2 major types: specific, due to technical oversights, or general, as related to any major upper abdominal procedure. They are listed in table 1. There were only 2 early complications in 1951, 8 in 1956, and a peak of 15 postoperative mishaps in 1961. There was a slight increase in the number of gastrectomies performed yearly but not enough to explain the rise in morbidity in recent years. From 1951 to 1956 there were 289 gastrectomies with 23 complications, while from 1957 through 1962 there were 59 complications following 368 procedures, more than double the early morbidity rates.

TABLE 1: Types of Gastrectomy Complications (Early)

Group A	Group B
Specifically Related to Gastric Surgery	May Occur with Any Abdominal Surgery
1. Mechanical and/or technical a. Obstruction (1) Efferent (2) Afferent b. Hemorrhage c. Leakage from duodenal stump d. Injury to extrahepatic ducts e. Injury to pancreas or its ducts 2. Physiologic a. Electrolyte depletion	1. Pulmonary 2. Thromboembolic 3. Infection 4. Evisceration 5. Cardiac 6. Genitourinary

Material

Case selection. All definitive operative procedures performed for gastric, duodenal or marginal ulcer at Providence Hospital during the years 1951 through 1962 are included. The exclusions are all emergency procedures for perforated ulcer, limited procedures to control gastric or duodenal hemorrhage, and all surgery for gastric carcinoma or tumor.

Indications for surgery. The accepted criteria for surgical treatment in complicated peptic ulcer were followed in these cases. Gastrectomy was advised for recurrent bleeding, obstruction, hemorrhage not responding to 24 hours of blood replacement, intractable pain, recurrent perforation, marginal ulcer, and X-ray persistence of gastric ulcer or the suspicion of malignancy.

Operators. From 1951 to 1956 over 90 per cent of the ulcer surgery performed at Providence Hospital was done by 6 surgeons, average age over 50, and the house staff. In the latter half of the series, 12 surgeons, average age about 45, and the senior residents shared 90 per cent of the case load.

Technique employed. The diagram (figure 1) outlines in crude form the various methods of reëstablishing gastrointestinal continuity following partial gastric resection. All these methods were used in this series. The most popular procedure was the Polya-antecolic anastomosis. It is perhaps technically more easy and less time-consuming, since the surgeon neither has to incise the mesocolon and attach it to the gastric remnant nor does he have to fashion the Hofmeister valve. A long afferent loop remains, and, as we shall point out in the following discussion, the few saved minutes may be exchanged for some subsequent severe headaches.

TABLE 2: Trends in Operative Technique

	1951	1956	1962
Subtotal gastrectomies	41	51	54
Retrocolic Billroth II	29	10	13
Antecolic Billroth II	11	37	33
Billroth I	1	4	6
Sleeve or wedge resection	0		2
(Catheter duodenostomy)	5	3	1

As seen in table 2, the long-loop antecolic anastomosis was more in favor with our surgeons during the later years of the series than the short-loop posterior Hofmeister preferred in 1951. It will also be noted that catheter duodenostomy, a comfortable hedge against duodenal blowout in the inflamed or poorly sutured stump, had fallen into apparent disrepute by last year. A trend toward more conservative surgery was evidenced by the increased use of the Billroth I and sleeve resections in recent years for gastric ulcer.

Anesthesia. There were only 13 cardiopulmonary complications in this entire series with 2 deaths, 1 due to pulmonary edema in a patient who suffered a coronary thrombosis after massive hemorrhage. It is admitted that the anesthesia department made no significant contribution to the mortality in this series.

Pre- and postoperative care. Handling of the gastrectomy patient during the past 15 years has become well standardized. Except for less dependence on antibiotics and Levin tube drainage and the advent of more complete replacement solutions during the second half of this series, there was no significant increase in morbidity attributed to a laxity of pre- and postoperative care. There were no cases of electrolyte imbalance, without obstruction, during the last 5 years.

Criteria for morbidity. All hospital deaths and those patients staying in the hospital over 13 days following gastrectomy were considered to have suffered a major postoperative complication. Those patients staying on for treatment of preexisting disease or associated (nonrelated) surgery were excluded. Minor complications which did not significantly lengthen the patient's hospital stay or affect his return to normal activity are not considered in this paper.

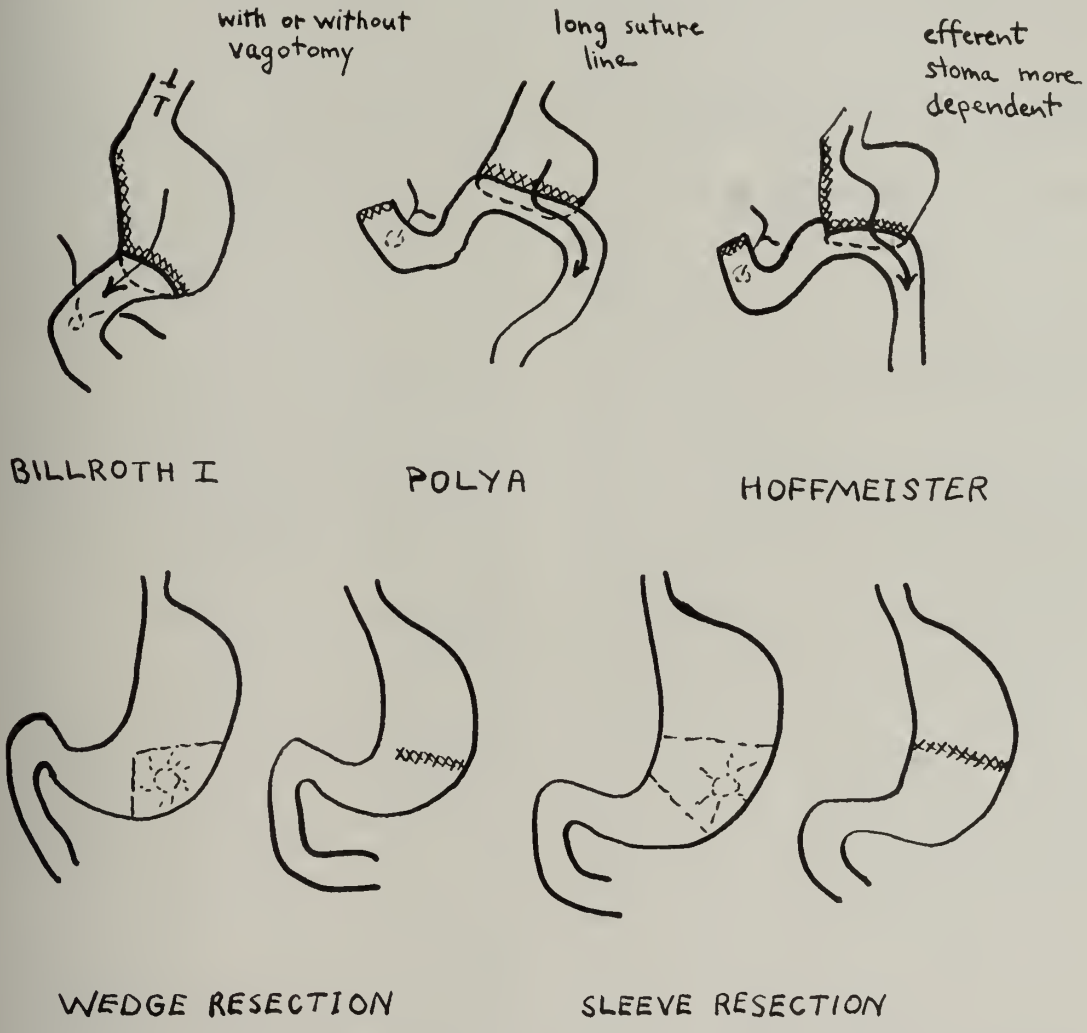

Fig. 1. Diagrammatic outline of techniques employed in this series.

Specific complications (table 3). Most of the deaths in this series were due to either duodenal leakage or obstruction of the afferent loop. Only those cases in which definite distention or necrosis of the proximal loop proven at autopsy or at re-operation were recorded as afferent loop obstruction. It is quite evident that there is always some element of proximal-loop compression and back pressure in all cases of duodenal stump "blowout." Of the 17 patients so afflicted, 15 occurred following a long-loop antecolic anastomosis. All 9 deaths from these complications occurred in patients with an anterior loop. The 2 patients with duodenal leakage following retrocolic anastomosis survived. Single fatal terminations were attributed to the following: postoperative anastomotic hemorrhage, hemorrhagic pancreatitis, wound dehiscence, and bile peritonitis due to injury to the common bile duct.

All 9 patients with subphrenic abscess recovered following adequate drainage and specific antibiotic therapy. Most cases of efferent obstruction followed the Billroth I or posterior Hofmeister techniques and responded to prolonged tube drainage and electrolyte replacement.

Surgery for massive hemorrhage, although carrying a higher morbidity rate, did not result in an excessive mortality. From 1957 through 1962 53 of the procedures were for massive hemorrhage. There were 15 complications and only 2 deaths. This is less than double the morbidity rate for all operative indications in this series.

The surgeon need look no further than into his choice and execution of technique to explain the majority of these complications. The patient's general condition at the time of surgery was not an important factor in these statistics. Several deaths occurred in robust 30-year-old men.

TABLE 3: Major Complications in Gastrectomies for Ulcer 1951–1962

Complications	Incidence	Deaths
Duodenal leakage	12	5
Afferent loop obstruction	5	4
Efferent (stomal) obstruction	9	0
Electrolyte deficit (without obstruction)	2	0
Hemorrhage, postoperative	7	1
Pancreatitis, acute	1	1
Common bile duct injury	2	1
Intra-abdominal (subphrenic) abscess	9	0
Wound disruption	11	1
Wound infection (severe)	11	0
Pulmonary complications	12	1
Thrombophlebitis	1	0
Profound ileus	1	0
Fecal impaction	1	0
Gastroileostomy	1	0
Adrenal cortical insufficiency	1	0
Unexplained hyperpyrexia	2	0
Febrile transfusion reaction	1	0
Genitourinary infection	1	0
Hematoma of wound	1	0
Acute pulmonary edema	1	1
	—	—
	92	15

Illustrative Cases

1. Fatal afferent loop blowout.

Case 1. No. 490. A white man aged 34 years entered the Hospital with a 10-year history of duodenal ulcer and recent obstructive symptoms. At operation a posterior perforating ulcer was noted in the first part of the duodenum. There was considerable scarring, but a good stump closure was effected and a Hofmeister gastrojejunostomy (antecolic) performed. The patient received 2 units of blood during surgery and withstood the procedure well. On the first postoperative day he complained of pain over the area of the incision. On the second day the abdominal pain had increased. On the third day the patient seemed "sluggish." He had 2 loose bowel movements. The nurses noted that he was apprehensive, and the pulse had become thready, ranging from 120 to 128 per minute. The skin was cold and clammy. Some distention was present. A Levin tube was inserted and attached to suction. On the fifth day the patient began to vomit dark brown liquid material at short intervals. He had dark liquid stools. Moderate generalized abdominal distention was present. On the following day the patient appeared tense and apprehensive. Abdominal pain was marked. Numerous liquid stools were passed. On the seventh day the patient appeared somewhat improved. During the eighth postoperative day he complained of extreme thirst and imbibed large amounts of water without satisfaction. The abdominal distention and diarrhea became progressively worse. The patient appeared weak and cyanotic with a gradual fall in blood pressure. Upright X-ray examination of the abdomen on the day of death revealed free air in the peritoneal cavity. A fluid wave and dullness to percussion were elicited, but the patient died at 8:30 p.m.

At autopsy a gush of greenish brown feculent fluid greeted the prosector on entering the peritoneal cavity. The duodenal stump and anastomosis were intact. The long proximal jejunal loop had apparently migrated under the efferent loop and had become knuckled on itself, and appeared grossly dilated and infarcted. There was a 0.5 cm. ragged perforation at the necrotic apex of the compromised afferent loop through which bowel contents could be freely expressed.

2. Afferent loop syndrome with severe electrolyte depletion.

Case 2. No. 88634. A white man aged 50 years underwent surgery for intractable pain due to duodenal ulcer. The ulcer was excluded and a Polya-anterior long-loop gastrectomy was performed. All went well until the sixth postoperative day, when the patient vomited a basin of green liquid. Intravenous fluids were restarted. On the following day the upper abdomen was distended, and a Levin tube was reintroduced. By the ninth postoperative day the abdomen was again soft, and the nasogastric tube was clamped. The serum chloride was 75 mEq. and the potassium 2.8 mEq.

For several days the patient did well, but on the thirteenth day he had massive bile-stained vomiting which occurred while he was lying down. The surgical resident suspected an afferent loop syndrome. Vomiting persisted for the next 3 days, and a barium swallow at that time revealed a dilated, fluid-filled stomach with the medium rapidly filling the proximal loop but with delay of passage into the distal loop.

Intermittent vomiting continued until the twentieth postoperative day, when the patient experienced generalized convulsions and tetanic carpopedal spasms. He was severely apprehensive. Laboratory studies now revealed a serum chloride of 64 mEq. and a less spectacular decrease in the serum sodium, potassium and calcium. Surgical and medical consultants descended on the patient and a flurry of heroic electrolyte and fluid replacement ensued. Despite massive vomiting, parental therapy brought the patient's chemistry and serum proteins to a safe enough level to permit exploratory surgery by the thirty-fourth day.

At re-operation a markedly dilated stomach and swollen edematous afferent loop were identified. The efferent loop appeared normal. An entero-enterostomy was made between the 2 intestinal limbs, and a distal gastrojejunostomy was performed. Subsequent recovery was gradual and uneventful, and the patient was discharged on the forty-fifth day following his Polya-anterior gastrectomy.

Comment. The "afferent loop syndrome" has been well documented by Wells and MacPhee.[1] They described 2 variations of the entity. First, severe cases are most common after antecolic, antiperistaltic gastrojejunostomies and are usually due to a long proximal loop passing between the shortened mesentery of the distal loop and the transverse colon. This may result in the closed loop obstruction which may be fatal, as typified by the first case. This entity may occur in the immediate postoperative period or may have its onset months or years following surgery. As Simon[2] points out, the symptoms in the severe cases are characteristic: a recent or past history of gastrectomy with unrelenting epigastric pain accompanied by shock; vomiting, which is limited or late and usually free of bile; and usually tenderness over the right epigastrium. Death is due to perforation of the afferent loop with generalized peritonitis.

The second variation is intermittent or chronic afferent loop obstruction. The patient is conscious of an abdominal pressure with intermittent or increasing abdominal distention, most marked in the upper quadrants; intestinal motility is increased, with an uncomfortable sensation just to the right of the midline. Nausea and anorexia are due to the arrest of bile and pancreatic secretions in the obstructed loop. Intermittent vomiting is more usual when the patient assumes the recumbent position. Vomiting relieves the discomfort. The syndrome was corrected in the second case by enterostomy with the distal loop.

3. Efferent obstruction.

Case 3. No. 348830. A white man aged 54 years was a known ulcer patient for 31 years. X-ray examination revealed the offending lesion to be in the proximal duodenum. A posterior isoperistaltic Hofmeister gastrectomy was performed. The gastrojejunostomy was on the "small side" and admitted the thumb tip. The early postoperative period was uneventful. Regurgitation and vomiting occurred following each feeding and persisted through the eighth day. The patient was maintained on intravenous dextrose solution and distilled water during the critical period. It was thought that a stomal obstruction was present, and the patient was reëxplored on the ninth day postgastrectomy.

The line of anastomosis was found to be edematous with consequent significant stomal narrowing. An antecolic long-loop gastrojejunostomy was performed. The patient was maintained on Wangensteen suction for 2 days. At this time a potassium reading of 3.8 mEq. was obtained. The other electrolytes were within the normal range. The patient made an uneventful recovery.

Comment. Much discussion on the cause of stomal obstruction has appeared in the literature in recent years.[3, 4] Various factors, such as atony of the gastric remnant due to some disruption of its intrinsic innervation, technical errors such as suturing the mesocolic rent tightly about the anastomotic area in the postcolic procedure[5] or having the efferent loop opening into the stomach more cephalad than the afferent limb, poor preoperative nutrition with lowering of the serum protein levels, and electrolyte disturbances have all been implicated.

In this case the contributing factors are quite obvious. The stoma itself was made quite small leaving little leeway for expected postoperative edema. A patient on suction for 3 or 4 days with good renal output and inadequate parenteral potassium replacement is bound to develop hypokalemia. Serum potassium levels in these patients may be misleading, since the cellular potassium is rapidly mobilized to the extracellular compartment following stress such as surgery, and is further drawn out to replace the extracellular potassium lost via the gastric suction and through the kidneys. With the loss of the potassium ion from the cells serum sodium passes into the cells; thus the electrolyte pattern is severely deranged and interferes with many mechanisms, such as acetyl choline formation and the process of nerve conduction. It is the decrease in cellular potassium, therefore, which must be avoided in these cases. To prevent hypokalemia and the accompanying alkalosis due to chloride loss via suction, 2 important principles must be adhered to: 1. When renal function is unimpaired and the patient is on gastric suction, adequate parenteral potassium and chloride must be provided. 2. When the patient is on suction, he should not be given oral nonelectrolyte fluids, since, in effect, these will act as a lavage and further deplete the potassium and chloride stores.

4. Leakage from the duodenal stump.

Case 4. No. 3958. A white man aged 54 years gave a 2-year history of epigastric pain and several episodes of melena. Intensive medical therapy had been unsuccessful. At surgery marked scarring and induration of the duodenum were found. The ulcer was located in the second portion of the duodenum, and an exclusion procedure was decided upon.

An anterior Hofmeister gastrojejunostomy was performed. Since the duodenal closure was not completely satisfactory a rubber tissue drain was placed down near the stump. On the second postoperative day sudden abdominal pain occurred with a rise in temperature to 102° F. Following an enema, duodenal drainage in fair amounts was noted on the dressing. On the third postoperative day large amounts of duodenal drainage were noted. The abdomen was distended; peristalsis was absent. A right lower lobe atelectasis was present, and there were occasional cardiac extrasystoles.

Electrolyte values were followed closely, and fluids were replaced. Parenteral protein supplements were also given. The atelectasis cleared rapidly, and the duodenal drainage decreased slowly.

The patient was discharged on the sixteenth day with minimal duodenal drainage and a normal serum protein level and electrolytes.

Comment. Good surgical judgment was exercised in leaving the ulcer undisturbed in this patient, and the presence of a drain probably averted disaster. Postoperative morbidity could have been shortened by direct duodenal drainage.

In the presence of an unexcised ulcer and insecure duodenal closure Gaffney[6] advises the insertion of a French catheter of generous bore through the healthy duodenal tissue distal to the ulcer. In this case an antecolic anastomosis was performed with the afferent loop to the lesser curvature. The omentum was left in situ. It has been shown that a long afferent loop with an intact omentum is subject to kinking and compression by the weighty omentum which may lead to a form of incomplete closed-loop obstruction and considerable pressure within the duodenum. This factor may have contributed to stump blowout. It might be more advisable when a poor duodenal closure or residual ulcer is present to do either a postcolic anastomosis or remove the omentum and thus shorten the afferent loop. Sanzaro[7] maintains that in an antecolic anastomosis the loops hang more naturally with less chance of an afferent kink if the proximal loop is joined to the greater curvature.

5. Injury to the ductile structures.

Case 5. No. 4640. A white woman aged 47 years had an 18-year history of ulcer symptoms. She had survived a massive upper gastrointestinal hemorrhage 4 years prior to this admission. Her presenting complaint was epigastric pain and discomfort becoming progressively worse despite the usual medical regimen.

At surgery the duodenal dissection proved extremely difficult because of dense scar between the duodenum and pancreas. There was considerable edema of the pancreatic head. A satisfactory duodenal closure was negotiated and a retrocolic Hofmeister gastrectomy performed. On the second postoperative day tachycardia was noted, 3-plus abdominal distention was present, and bowel sounds were hypoactive. A low-grade fever was present. On the seventh postoperative day the patient appeared improved, and the skin sutures were removed. Because of persistent spiking fever (to as high as 103°F), weakness, anorexia, nagging right subcostal pain, and a feeling of fullness in the right hypochondrium, the right angle of the wound was probed on the thirteenth postoperative day. About 100 ml. of yellow watery material was drained from the right subhepatic space. Drainage continued with excoriation of the skin. Laboratory tests on the fluid from the fistula were positive for pancreatic enzymes. Fever persisted for several weeks, gradually abating. The patient was discharged on the fortieth postoperative day with about 50 ml. of daily pancreatic drainage from the fistula.

Comment. This case was discussed at length by the surgeon[8] who thought that, although care had been taken to guard the common bile duct and the ampullary region during the difficult dissection, the accessory pancreatic duct had been severed. Many cases of otherwise unexplained duodenal stump "blowout," fistulization and subhepatic abscess may be due to injury to the duct of Santorini. The accessory pancreatic duct is quite variable as to its size and function due to its complicated embryology. Callander[9] illustrates cases in which the accessory duct is rudimentary with no connection to the duodenum and other instances in which no proximal segment of the duct of Wirsung is present with the accessory duct acting as a shunt between the distal segment of the main duct and the duodenum into which it pours most of the pancreatic exocrine secretions. The minor papilla is usually located about 7 cm. caudal to the pylorus and 2 cm. proximal to the ampulla.[10] Thus it is more prone to injury than the main duct. In these cases injury to the accessory duct or its papilla can result in serious consequences.

6. Inadvertent gastroileostomy.

Case 6. No. 27553. A colored man aged 73 years was a clinic patient with a known treatment history for peptic ulcer of 9 years. He was admitted in shock through the emergency room. His hemoglobin was 6 Gm., and he had apparently been bleeding for over 48 hours. He received multiple transfusions and protein hydrolysate and was deemed in satisfactory condition for surgery 4 days following admission.

A subtotal gastrectomy (Polya-anterior) was performed. The first few postoperative days were uneventful. On the fourth day, however, the patient appeared somewhat dehydrated. It was noted that he was having frequent loose stools. On the seventh day the patient began to vomit; the vomitus was bile-stained and persistent. X-ray examination on the ninth day was not satisfactory but indicated delayed stomach emptying. X-ray films 24 hours later revealed a dilated stomach with slow passage of barium into a short segment of the small intestine and thence into the colon. The serum albumin was 1.4 Gm. The patient was returned to the operating room on the following day, where it was discovered that the gastric remnant had been anastomosed to the terminal ileum. The anastomotic site was resected. A side-to-side ileoileostomy was performed and a Hofmeister antecolic revision done. The course after this second operation was less than ideal. It was marked by hiccoughs, vomiting, hypoalbuminemia, oliguria, and wound infection. The situation was corrected by passing a feeding tube through a gastrostomy into the efferent loop and by multiple blood transfusions, parenteral fluids, and serum albumin infusion. The patient was discharged to outpatient care about 2 months following admission.

Comment. Among 657 gastrectomies accidental gastroileostomy is bound to happen at least once. All centers report it, but it is rarely mentioned in the literature. The typical symptoms and X-ray findings are adequately demonstrated in this case. Prophylaxis is simple by identifying the ligament of Treitz and making sure characteristic proximal jejunum is joined to the stomach.

Discussion

Other interesting cases in this series include a death due to injury of the common bile duct during the duodenal dissection and a case of multiple subhepatic, subdiaphragmatic, and intrahepatic abscesses following a prolonged and difficult gastrectomy in an obese patient. This patient survived the siege with repeated hospitalizations and prolonged morbidity.

Although approximately 20 per cent of the ulcers operated upon in this series were gastric or prepyloric, there were no deaths in this group, and complications were limited to abscess formation or wound breakdown (5 cases). This is more than just coincidence and probably indicates that an overly zealous dissection around the inflamed duodenum and pancreatic head yield a high incidence of complications. This is well borne out in our series where in the later years the surgeons were more inclined to attack the ulcer "all out" rather than settle for a gastrojejunostomy with vagotomy. It seems that duodenal catheters were used less frequently and in cases in which they might have averted prolonged morbidity.

Maingot[11] lists very succinctly a good guide to choice of operative procedures in his treatise on abdominal operations. He prefers:

1. A Billroth I or Polya-Hofmeister subtotal gastrectomy in those cases in which the ulcer is in the first portion of the duodenum and the dissection is easy.
2. Closure of the duodenum, abandoning the ulcer intact, and proceeding with a Polya-Hofmeister if the ulcer is in the distal first portion or embedded in the pancreas.
3. If the ulcer is large and excavating and involves the common bile duct or hepatic artery, he prefers a choice of conservative procedures, i.e., vagotomy and posterior gastroenterostomy, the Bancroft-Plenk operation or antral exclusion and partial gastrectomy with a second stage procedure when conditions permit.
4. In cases in which the duodenal dissection is difficult and the ulcer is large and callous additional safeguards are advised; among these are catheter duodenostomy and choledochostomy (as suggested by Lahey) before proceeding with gastroenterostomy.

Certainly no surgeon would dare proceed with gastric resection without adequate knowledge of the anatomic aspects of the region, and it is obligatory that he be familiar with the physiology of gastric and upper intestinal motility and the anticipated functional derangements following surgery. He must remember that the gastric remnant will retract considerably following resection and gauge the length of his afferent loop accordingly.[12] The gastric remnant has no intrinsic emptying powers, it lacks peristalsis, and its emptying depends on gravity, jejunal peristalsis, respiratory excursions of the diaphragm, and other factors. The anastomosis must be arranged so that the efferent opening is lower than the afferent. He must be acquainted with the electrolyte derangements consequent to this operation and prolonged nasogastric suction.

From this series we must infer that the use of the long-loop Polya-anastomosis is to be avoided as a routine procedure since it carries with it a high risk of the deadly afferent loop obstruction and duodenal leakage.

Attention to details of technique is very important in gastrectomy. Most complications following this operation are due to either poor judgment in the choice of surgical procedure or faulty

(*Continued on page 210*)

Urinary Steroids in the Diagnosis of Adrenal Disease[*][†]

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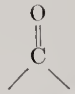
Washington

THERE IS CONSIDERABLE misunderstanding in clinical circles of the significance of some of the measurements of the adrenal steroids in urine. Some simple schemas will be presented in order to facilitate understanding of the chemical procedures. The most frequently measured substances in assessment of adrenal functions are the 17-ketosteroids (17-KS), ketogenic steroids (17-KGS) (reduced and oxidized), and 17-hydroxysteroids (17-OHCS). In addition, in certain conditions the levels of pregnanetriol, desoxycortisol, and similar compounds are useful.

17-Ketosteroids. This represents a measure of the steroids with a ketone group at carbon 17, i.e., as in dehydroepiandrosterone:



The chemical reaction involves the production of a purple color on addition of *m*-dinitrobenzene with alcoholic potassium hydroxide. The spectral peak of the color product is at 520 mμ. The compounds measured by this procedure include epiandrosterone, dehydroepiandrosterone, adrenosterone, androstonedione. The requirement for this reaction is the presence of a C 17-ketone group. The level of 17-ketosteroids is employed as a measure of androgen levels, but the androgens included are mainly those of weak potency. It is well to note that the natural androgen in the human being is testosterone, which is not a 17-ketosteroid but a C 17-hydroxylated compound.

There are several methods employed for the measurement of this type of compound. The 17-ketosteroids are extracted from urine after hot acid hydrolysis (i.e., adding HCl and heating in a boiling water bath) or following enzymatic hydrolysis with β-glucuronidase. The steroid is extracted with ethylene or methylene dichloride or similar solvent, after which phenols and pigments are removed by shaking with NaOH pellets or with aqueous NaOH. The Zimmerman reaction involving *m*-dinitrobenzene in alcoholic potassium hydroxide is a sensitive and reliable method for measure of the 17-ketone structure.

This procedure is also employed as an index of adrenal function, but it is inferior to the method for measurement of 17-hydroxycorticosteroids (17-OHCS) (Porter-Silber chromogens) or of 17-ketogenic steroids, which will be discussed. It is also important to note that a significant amount of the urinary 17-KS is derived from the biologic breakdown of C 21-corticosteroids mainly in the liver and that occasionally the levels of these substances may be affected by alterations in the hepatic metabolism, e.g., in cirrhosis, diabetic acidosis, and congestive hepatomegaly. The normal levels of urinary 17-ketosteroids are 7–14 mg. in the female and 9–18 mg. in the male per 24 hours. A clinically useful procedure for 17-KS is that of Sobel et al.[1]

17-Hydroxycorticosteroids (17-OHCS; Porter-Silber chromogens). 17-Hydroxycorticosteroids are measured by the Porter-Silber reaction after acid or enzymatic hydrolysis of the urine. The color reaction of the neutral extract involves coupling with phenylhydrazine hydrochloride in dilute sulfuric acid. The optical maximum in this procedure is at 420 mμ.[2, 3] The substance measured by this method contains the 17-OH, 20,21-ketol grouping; these compounds include cortisone, cortisol (hydrocortisone), and compounds 11-desoxy-17 hydroxycorticosterone. The usual procedure does not require chromatographic or other methods of purifying the extracts, and nonspecific color is usually subtracted by the use of sulfuric acid blanks. The method has proved reliable despite this omission. More accurate values are obtained following silica gel or florisil chromatography. This procedure is regarded as a good index of adrenal function in the human being, since the main adrenal steroid in this species is cortisol. However, substances such as corticosterone and aldosterone, which also occur in the human urine, are not measurable by this method; these compounds contain the α-ketol structure but are not hydroxylated at C 17. The representative structure for the Porter-Silber reaction is as follows:

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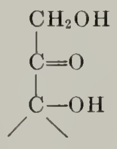
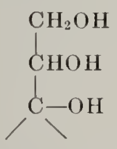
[†] This work was aided by Research Grant A-4342 from the National Institutes of Health, Public Health Service, United States Department of Health, Education, and Welfare.



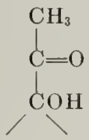
The normal level of this type of substance is 3–9 mg. per 24 hours. In the presence of adrenal hyperactivity there is usually an increase in these levels, with decreases in adrenal hypofunction. It has been shown, however, that there are situations in which there is adrenal hyperactivity with increased production of cortisol, but with only slightly elevated or normal levels of 17-hydroxycorticosteroids as measured by this method. The reason for this is presumed to be that the increased cortisol production is accompanied by a rapid enzymatic reduction in the liver to dihydrocortisol and to tetrahydrocortisol. These substances contain the glycerol side-chain:



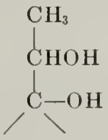
This structure is not measured by the Porter-Silber reaction. It is apparent, therefore, that the status of peripheral organs may also influence the urinary levels of 17-OHCS.

It is important to recognize that the level of 17-OHCS does not necessarily reflect the level of cortisol, the normal product. As pointed out earlier desoxycortisol also contains a 17-OH 20,21-ketol side-chain and is measurable with the Porter-Silber reaction. It has been shown that in adrenal biosynthetic defects involving C^{11} hydroxylation there frequently occurs a rise in the urinary levels of 17-OHCS, yet the patient suffers from signs and symptoms of cortisol deficiency. These symptoms and signs have been mentioned in a previous paper[4] and have been reported by other workers. I recently saw 1 patient who showed several signs of cortisol deficiency including a moderate hypoglycemia and skin pigmentation suggestive of Addison's disease. This patient was found to have an increased sodium/potassium ratio in the serum and was hypertensive. She died following a neurosurgical procedure for a cerebrovascular anomaly. The adrenals on autopsy revealed the occurrence of nodular hyperplasia in several areas of the adrenal cortex. The urinary steroid pattern revealed the occurrence of 11-desoxygenated compounds, and it is presumed that these areas in the adrenal lacked sufficient 11-β hydroxylase activity. Chromatographic and partitioned studies reveal that in such situations there is a decrease of cortisol with an increased or normal amount of desoxycortisol.[4] The Porter-Silber chromogen procedure, then, is not specific for cortisol. If partition methods are employed to separate the 11-oxygenated steroids from the 11-deoxygenated steroids, then the Porter-Silber chromogen values in the 11-oxygenated fractions fairly accurately represent the levels of cortisol and cortisone.

In the presence of a defect in C 21-hydroxylation there is an accumulation of substances lacking the 17-OH 20,21-ketol side-chain (i.e., Porter-Silber chromogens; 17-OHCS). The compounds which accumulate contain the structures:



as in 17-hydroxyprogesterone or its reduction product pregnanetriol which contains the side-chain:

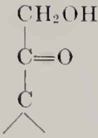
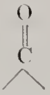
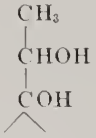
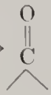
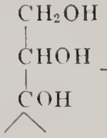
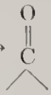
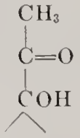
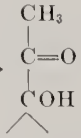
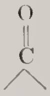
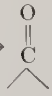


Since these compounds may be metabolized to 17-ketosteroids, the finding of elevated levels of 17-KS associated with normal or low levels of 17-OHCS should suggest a defect in C 21-hydroxylation. After ACTH injection there occurs a prompt increase in the urinary levels of 17-OHCS in the normal subject or in patients with adrenal hyperactivity, but in virilizing adrenal hyperplasia in which there is defective C 21-hydroxylation a significant rise in 17-OHCS may not occur.

17-Ketogenic steroids. The 17-ketogenic steroids technically are steroids which are capable of being oxidized to 17-ketone compounds; therefore, the preformed 17-ketosteroids should not be included in this group. It has been the practice of some workers to employ the term to include the strict 17-ketogenic steroids plus the preformed 17-ketosteroids.

If to an aliquot of urine is added sodium bismuthate in acetic acid, the strictly 17-ketogenic compounds (except group d, table 1) are oxidized to 17-ketosteroids. Hot acid treatment of the bismuthate-treated urine will result in the hydrolysis of conjugates of new 17-KS and of the preformed 17-KS. Extraction with appropriate solvent, followed by the steps mentioned above, and the Zimmerman reaction will result in the value for total ketosteroids (i.e., 17-ketogenic and preformed 17-KS). The term total 17-ketogenic steroids is sometimes employed to describe this fraction. This fraction will include 17-KS as well as compounds oxidizable to 17-ketones by sodium bismuthate. These include compounds with the side-chains of groups a, b, c, and e.

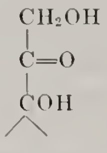
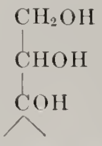
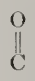
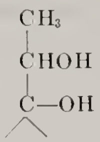
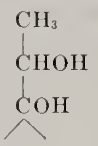
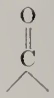
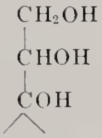
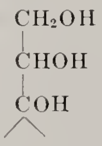
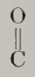
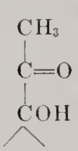
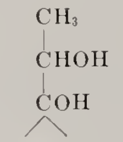
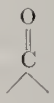
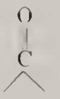
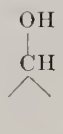
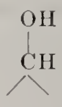
TABLE 1: Oxidation of 17-Ketogenic Steroids to 17-Ketosteroids by Addition of Sodium Bismuthate and Glacial Acetic Acid to Urine

Group and Compound	Side-chain Structure	Procedure	Products
(a) Cortisol, cortisone, 17-hydroxycortexon, tetrahydrocortisol, tetrahydrocortisone, dihydrocortisol, dihydrocortisone, corresponding $\Delta^{1,2}$ compounds		$\xrightarrow{NaBiO_4}$	 (17-ketone)
(b) Pregnane, 3α, 17α, 20α triol		→	
(c) 20α and 20β, cortol and cortolone		→	
(d) 17-αhydroxyprogesterone, 3-α, 17-αdihydroxypregnane, 20-one		→	
(e) Dehydroepiandrosterone, androsterone, etiocholanolone, 11-keto, and 11-β hydroxy derivatives of androsterone and etiocholanolone, adrenosterone		→	

If the urine is initially treated with potassium borohydride certain structures in the side-chains are reduced as shown in table 2. The preformed 17-KS (group e) are reduced to the 17-OH structure. Subsequent oxidation with sodium bismuthate results in the production of 17-ketosteroids from these 17-ketogenic compounds, but the C 17-OH derived from 17-KS (group e) is left intact. It becomes clear, then, that the procedure of borohydride reduction followed by bismuthate oxidation resolves steroids of groups a through d for detection as 17-ketosteroids; i.e., these are the 17-ketogenic steroids. In this method the preformed 17-ketosteroid is reduced to a 17-hydroxyl which is not oxidized by bismuthate and hence is not included in the final Zimmerman reaction value.

An alternative method is occasionally employed for the detection of strictly 17-ketogenic steroids. In the method 2 procedures are necessary: (1) the determination of the preformed 17-KS (group e) by the usual procedures, i.e., hydrolysis followed by the Zimmerman reaction, and (2) the determination of 17-ketosteroids following oxidation with bismuthate. The value of (2) minus (1) equals strictly 17-ketogenic steroids. This method is fairly accurate, but it should be noted that compounds of the group d, i.e., 17-hydroxyprogesterone, pregnane-3α, 17 α-dihydroxy 20-one, and other C 21 methylated compounds are excluded by this procedure. The procedure of borohydride reduction

TABLE 2: Oxidation of Strict 17-Ketogens to 17-Ketosteroids by the Procedure of Borohydride Reduction Followed by Bismuthate Oxidation

Group	Side-chain Structure		Product following Borohydride Reduction		Product following Subsequent Bismuthate Oxidation
(a)		→		→	
(b)		→		→	
(c)		→		→	
(d)		→		→	
(e)		→		→	 (17-hydroxy)

followed by bismuthate oxidation is therefore considered to be superior to the method just described.

Within the past few years there have been several reports on the urinary levels of 17-KGS (strictly 17-KGS) in adrenal disease. An extensive study by Plantin et al[5] showed very clearly that this method represents the single best method for laboratory assessment of adrenal cortical function. The values correlated well with clinical states as well as in the response to ACTH stimulation. Our data confirm their findings, and in addition we have found this method to be reliable in the determination of pituitary adrenal axis response of urinary 17-KGS and 17-KS to ACTH and to metopirone (SU 4885, Ciba) and have been useful in the detection of "limited pituitary reserve" and "limited adrenal reserve." Clinically applicable procedures for 17-KGS are those of Plantin et al[5] and Sobel et al.[6]

Pregnanetriol is the reduction product of 17-hydroxyprogesterone. This substance accumulates in the presence of a defect in the process of C 21 hydroxylation. The method of determination involves hydrolysis of conjugated pregnanetriol with β-glucuronidase extraction with ethylene dechloride, benzene, or similar solvent.[7, 8] The extract is then applied to alumina columns and eluted with the appropriate solvent. The optical density at 420 mμ after the addition of concentrated sulfuric acid is proportional to the content of pregnanetriol. It is also possible to employ paper chromatography to separate this substance prior to determination of the sulfuric acid chromogens. The normal range of this substance is 0–3 mg. per 24 hours. There is a significant elevation in the adrenogenital syndrome resulting from C 21 hydroxylase deficiency.

Desoxycortisol (Compound S). This compound is discussed because it is one of the 17-hydroxycorticosteroids which are elevated in the hypertensive form of virilizing adrenal hyperplasia. This compound and its reduction product, tetrahydro S, are measured after solvent, or chromatographic, separation from cortisol and tetrahydrocortisol. In the metopirone test for measure of anterior pituitary responsiveness the level of these C 11-desoxygenated compounds is elevated.

Summary

A summary of the urinary steroid changes in various clinical situations is presented in table 3.

The laboratory procedures for determination of adrenal steroids in the urine have been discussed. The principles of the 3 major methods were considered, and, based on this information, terminology was clarified. It is proposed that the best single test for the assessment of adrenal function is the urinary level of 17-ketogenic steroids. Urinary levels of 17-hydroxycorticosteroids and of 17-ketosteroids are also useful in gauging adrenal cortical function. The major emphasis in this review is that the terminology should be based on the known chemical properties of the various side-chain structures of the corticosteroid metabolites.

TABLE 3: Changes in Urinary Corticosteroids in Certain Clinical States

Clinical State	Urinary 17-Ketogenic* Steroids (mg./24 hr.)	Urinary 17-Hydroxy-steroid† (mg./24 hr.)	Urinary 17-Ketosteroids (mg./24 hr.)
Normal male	9-16	3–9	9–18
Normal female	8–14	3-9	7–14
Cushing's syndrome	↗↗	↗↗	↗ or normal
Virilizing adrenal hyperplasia:			
with defective C_{21} hydroxylase	↗↗	↘ or normal	↗↗
with defective 11 β hydroxylase	↗↗	↘, ↗, or normal	↙ or normal
Addison's disease	↘	↘	↘
Laennec's cirrhosis	normal or ↗	normal or ↗	↘
Diabetic acidosis	↗	↗	↘
Aldosteronism	normal	normal	normal
Masculinizing ovarian tumor	normal	normal	↗ or normal

* Strictly 17-ketogenic steroids, i.e., borohydride reduction followed by bismuthate oxidation.

† Based on the measure of Porter-Silber chromogens, i.e., 17-OH, 20, 21-ketols.

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Multiple Cesarean Sections

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BREMNER AND DILLON[1] in 1955 presented 105 cases of 3 or more cesarean sections with no mortality. There were 2 uterine dehiscences in their series, but neither resulted in hysterectomy. In the same year McNally and Fitzpatrick[2] reported 130 cases of 4 or more cesarean sections with no maternal death. Five years later this figure was augmented by the same authors by an additional 710 cases which comprised an even geographical distribution over the United States and Canada. Maternal death was zero.[3] Commenting on the first 130 cases, Eastman[4] wrote: "The topic it treats has been neglected in the literature although many of us have pondered many times the fate of these uteri with multiple scars." Referring to the conclusion that fears relative to multiple uterine scars have little basis in fact, Eastman further states: "This is a new and important fact to have established—a fact it may be noted which pretty well annihilates any real obstetrical basis for routine sterilization after the third section. Those of us who have followed this widespread policy may not like this revelation, but the important thing is to know the truth whether we like it or not."

In spite of the impressive figures gathered by the above authors and the implied plea by Eastman for more reports, little has been appearing in the American literature to confirm or refute the newer concept of more confidence in uterine scars. Indeed, except for a small series recently reported by Tepedino, Bresnick, and Tisdall,[5] there is nothing to indicate that the fear of the cesarean scar has diminished. Not only is the concept of the "obstetric cripple" persisting, but there is a considerable movement afoot to sterilize patients with cesarean scars by hysterectomy instead of simple tubal ligation.[6-9] Bryant,[10] analyzing 2,486 sections, reported an incidence of 1,014 repeat sections; 255 of these were third or greater number of sections with no deaths attributable to the scar. Of women having 3 or more sections 61.3 per cent were sterilized. Hallatt and Hirsch[9] reported 65 total hysterectomies at cesarean section, 35 having as a sole indication 2 previous sections. Nineteen additional hysterectomies were done at the second section for various indications, including "Para III or more" and "constitutional inferiority." It should be noted that 47 of the 65 had to be transfused (72 per cent). Savel and Perlmutter[11] reported 305 sterilizations done between 1956 and 1958, 22 being done after the second section and 52 after 3 or more sections. The fear of the uterine scar accounted for 35.5 per cent of all the sterilizations. No less an authority than Duncan Reid[12] states in the 1962 edition of his textbook: "In general, the indications for therapeutic sterilization follow those for therapeutic abortion, and several previous sections, recurrent toxemia, and cardiovascular renal disease are examples."

There is irrefutable evidence which proves that uterine ruptures still account for 3 to 5 per cent of all maternal deaths. It would seem, however, that a critical appraisal of the part played by uterine scars in these deaths would show that scars are a very minor part; perhaps they may play no part. Although there is a scarcity of reports regarding multiple cesarean sections, there is no such dearth of material as concerns uterine ruptures. Waters,[13] analyzing 2,066 consecutive sections, found no maternal deaths from rupture of scars. Birkam et al,[14] reporting 17 ruptured uteri from various causes, found no maternal deaths among the 5 cases associated with section scars, all classical section scars. Erhardt and Gold,[15] studying 36 cesarean section deaths in New York City (out of 16,949 sections), did not implicate uterine scars in a single instance. Pedowitz and Schwartz,[16] in their analysis of uterine ruptures (48 scar disruptions, 1953–1956), stated: "There were no maternal or fetal deaths due to rupture." Matthews[17] in 1961 reported: "At the Los Angeles County Hospital there have been no maternal deaths from ruptured uterus in patients with previous section in the past 25 years." Hellegers and Eastman[18] found rupture or dehiscence 6 times in their series of 699 repeat sections. All 6 mothers and babies were discharged alive and well.

Since there is an admitted paucity of documented information regarding the outcome of patients with multiple cesarean scars, we are presenting an analysis of the experience from 1952 to 1962 inclusive in a community hospital under religious supervision where sterilization is not permitted except for definite pathology.

Methods and Material

The charts of patients who were delivered by cesarean section in Providence Hospital, Washington, D.C. during the period from January 1, 1952 through December 31, 1962 were reviewed.

TABLE 1: Relationship of Four or More Sections to Total Deliveries and Total Sections

Year	Deliveries	Sections	Per cent Sections	4 or More Sections
1952	1,970	34	1.73	1
1953	2,052	59	2.88	0
1954	2,103	66	3.13	3
1955	2,107	60	2.95	2
1956	2,636	76	2.88	3
1957	3,792	101	2.66	5
1958	4,019	116	2.89	7
1959	4,143	131	3.14	11
1960	4,216	127	3.01	6
1961	4,520	128	2.83	6
1962	4,589	132	2.88	13
TOTALS.....	36,147	1,030	2.85	57

Reference to table 1 will show that out of 36,147 total deliveries 1,030 were by the abdominal route. Of this number, 57 were cases of 4 or more sections. Of these, 43 were low cervicals, 13 were classicals, and 1 was a paravesical extraperitoneal. Seventeen qualified obstetricians performed the surgery. The number of cases done by each man constitutes table 2, and the numbers of 4 to 8 section women are enumerated in table 3.

In addition to inspecting the hospital records, information was sought from personal interview with each operator even if the chart appeared to be complete. Particular emphasis was placed on getting detailed information relative to operative findings.

TABLE 2: Number of Sections per Operator

	Operators	Sections
	1	12
	1	10
	1	6
	2	5
	1	4
	1	3
	2	2
	8	1
	—	—
TOTAL.....	17	57

TABLE 3: Distribution of Fourth to Eighth Section

No. Cases	Sections
38	4th
12	5th
4	6th
1	7th
2	8th

Since patients with 4 or more cesarean sections are in many instances sterilized, and with increasing frequency by cesaro-hysterectomy, the ages of the patients at the time of the fourth section have been tabulated (table 4).

TABLE 4: Age Range at Fourth or Greater Number of Sections in 57 Cases

Ages	No. of Patients	Per cent
15–19	1	1.75
20–24	5	8.77
25–29	11	19.30
30–34	22	38.60
35–39	15	26.32
40–45	3	5.25
TOTALS..........	57	100.00

Percentage below 35 years of age: 68.42.

Results of Study

Salient data of the 57 cases are as follows:

	Number	Per cent
Maternal deaths..................	0	0
Infants discharged alive and well....	56	94.90
Stillbirths..........................	2	3.39
Neonatal deaths...................	1	1.67
Prematures (including 3 sets of twins)	6	10.17
Symptomatic ruptures..............	0	0
Dehiscences......................	1	1.75
Cesaro-hysterectomies.............	4	7.02

Transfused patients	10	17.55
Patients with cesaro-hysterectomy	4	100.00
Others	6	11.76
Bladder entered inadvertently (1 with vesicovaginal fistula)	2	3.50
Gross hematuria postsection, cause unknown	1	1.75

Comments

At least 4 items deserve more elaboration—fetal loss, cesaro-hysterectomies, dehiscence, and transfusions. Accidental entry into the bladder is not very uncommon, nor is it usually of much moment provided a sound repair is accomplished. In the 1 case of a residual vesicovaginal fistula the dome of the bladder had been opened widely, and before this was realized an incision was carried through the posterior wall just above the interureteric ridge. At this time the catheter came into view. Repair was accomplished from within, the dome was closed, and the patient was delivered by classical section. A vesico-abdominal fistula developed, but it closed spontaneously prior to discharge. The vesicovaginal fistula persisted.

Fetal loss. Of the 53 babies weighing over 2,500 Gm., 52 survived. One was stillborn as a result of hydrops fetalis secondary to severe Rh iso-immunization. Five sections yielded 6 babies weighing less than 2,500 Gm. Of the 5 sections, only 1 was elective. This was in a clinic patient who had made 2 visits late in pregnancy and on whose record was found the notation, "continued to have periods in early pregnancy." The obvious conclusion is that there was poor judgment in selecting the time for section. The baby died of hyaline membrane disease in 24 hours. One baby was stillborn secondary to a total placental abruption at 32 weeks. The relationship of prematurity to time of section and fetal results is illustrated in table 5.

TABLE 5: Analysis of Six Prematures

Weight (Gm.)	Time	Time Determinants	Perinatal Mortality
1,920	32 wks.	Placental abruption	Stillborn
1,950	38 wks.?	Elective	Died 24 hrs.
2,130*	36 wks.	Labor	Survived
2,220*	36 wks.	Labor	Survived
2,425	39 wks.	Labor	Survived
2,485*	38 wks.	Ruptured membranes	Survived

* Twins

McNally and Fitzpatrick[3] reported no increased fetal loss in 710 patients with high parity cesarean sections. In fact, an incidence of 1.12 per cent fetal loss was a result of, or associated with, dehiscence or rupture of the uterus. They conclude that the risk of prematurity is greater with multiple cesarean sections, but their reported incidence of 6 per cent seems low when compared to Hellegers and Eastman's reported prematurity rate of 14 per cent in 699 patients of any parity with uterine scars.[18] Our reported incidence of prematurity of 10.17 per cent is heavily weighted by 3 sets of twins out of 6 premature sections. Excluding twins, the rate would be 5.09 per cent.

Irrespective of the influence of prematurity, the significant fact as concerns fetal salvage in multiple cesarean sections is that in this series 56 out of 59 infants survived, and that the 3 who did not survive did not do so in relation to the number of sections undergone by their mother.

Cesaro-hysterectomies. None of the patients who had a hysterectomy had as an accompanying condition either dehiscence or rupture. Their histories in substance are as follows:

Case 1. A 36-year old woman was having her sixth section. The indication for hysterectomy as given by the surgeon was "leiomyomata and extreme thinning of the lower uterine segment."

Case 2. Following her eighth section, soon after the abdomen was closed a 31-year-old multipara exhibited symptoms of excessive blood loss in spite of little external bleeding. The abdomen was reopened, and a large hematoma of the right broad ligament was found. Total hysterectomy was performed.

Case 3. A very obese, hypertensive woman had her fourth section at 32 weeks because of total placental abruption with a Couvelaire uterus. Cesaro-hysterectomy was done on this account as far as can be ascertained.

Case 4. "Thinning of the lower uterine segment" was the given indication in this patient having her fourth section. The baby was hydropic from erythroblastosis of Rh origin. The mother was 37 years old.

The incidence of cesaro-hysterectomy, 7.02 per cent, is in close agreement to that reported in McNally and Fitzpatrick's 2 series,[2, 3] 7.46 and 7.6 per cent respectively. The latter found that in 15 of 97 cases of cesaro-hysterectomy the only indication was "defective scar." The remainder had dehiscence, rupture, or other indications. Of the 4 hysterectomies reported here, "thinning of the lower uterine segment" was mentioned. Without wishing to engage in a discussion of the relative merits of the other indications, we consider it strange that "weak scar," "defective scar," and "extreme thinning of the lower uterine segment" should by themselves be indications for hysterectomy. These patients did not have dehiscence. What is there to indicate that they would not have gone through subsequent pregnancies? Also, in the presence of dehiscence in 15 patients with multiple sections, only 4 underwent cesaro-hysterectomy.[3] The other 11 had a repair of the uterus with no known detriment to themselves and, we suspect, with far less risk.

The only way to explain such an inconsistency is to state that it is a matter of clinical judgment. Clinical judgment, however, is predicated on facts and past experience. The crux of the situation is the answer to the question: What is a defective scar? Pedowitz and Schwartz[16] state: "A scar is considered to be intact regardless of its width or thickness if the edges of the myometrium are in complete apposition. It is not unusual to find a markedly and uniformly thin lower segment at elective primary cesarean section. This observation per se at repeat cesarean section does not indicate impaired integrity of the scar." When this statement is coupled to Cosgrove's,[19] "There should be no limit to the number of cesarean sections provided the integrity of the uterus is maintained," we are left with the impression that perhaps the extreme caution which warrants the removal of the uterus on the basis of "weak scar," etc. needs to be critically appraised.

Dehiscence. The only dehiscence reported was that of a classical scar. The patient also had 2 low cervical scars, which remained intact. The length of separation was 2 cm. and proper repair was accomplished without difficulty. During the period 1952 to 1962 there were in Providence Hospital 2 additional cases of dehiscence reported. These were in patients undergoing their third section. There were also 2 cases of overt rupture of uterine scars (cesarean and postmyomectomy) reported. One of the overt ruptures was in a patient in labor at 41 weeks' gestation. The other occurred at 7 months and resulted in a hysterectomy, although both placenta and the baby had remained in utero. All the mothers in cases of dehiscence or rupture survived. No conclusions can be drawn from so few cases, but it would appear that the disruption of the scar, be it dehiscence or overt rupture, occurred in less than 1 per cent. This is consistent with Hellegers and Eastman's reported incidence of 0.85 per cent but very much at variance with Pedowitz and Schwartz,[16] who found an incidence of silent ruptures of 10 per cent. It must be repeated that in the latter series "there were no maternal or fetal deaths due to rupture." Also, these authors stressed that scar disruption is a poorly reported condition. This we concede, but can the same be said of maternal mortality? We think not. Muller, Heiser, and Graham,[20] in reviewing 1,462 repeat sections, found 13 cases of rupture or dehiscence with no maternal or fetal deaths. Of these patients having repeat sections, 106 were having their fourth or greater number of cesarean sections. No mention is made in this detailed report as to whether rupture or dehiscence occurred more frequently at high parity, but the conclusion that "the maternal mortality after rupture of the precesarean scar is indeed minimal" is noteworthy. Is it so minimal that it is less than the mortality from cesaro-hysterectomy?

Blood Transfusions. The American Medical Association in 1960 reported 3,000 deaths in 1 year directly attributable to whole blood transfusion. It is calculated that the risk of a blood transfusion is about equal to that of uncomplicated appendectomy.[21] There are, in addition to those who lose their life, a very appreciable number who develop nonfatal hepatitis which may be disabling for long periods and leave varying degrees of hepatic impairment.

The realization of the above facts as regards blood transfusion should give one pause. It should not militate to withhold blood from a patient who needs it. In our small series all patients who had a puerperal hysterectomy were transfused. We have previously quoted a series of 65 cesaro-hysterectomies with 47 patients being transfused. Among the 53 patients who had their fourth or greater number of sections, and in whom the uterus was allowed to remain, only 6 were transfused. A critical analysis has not been made as to whether transfusion was imperative in every instance. In spite of this, it is glaringly obvious that the incidence of transfusions among the hysterectomized patients was roughly 9 times what it was among those who retained their uterus.

Conclusions

Excessive fear of cesarean section scars is an anachronism which is slow in being dispelled. This is attested to by the disproportionately large numbers of patients sterilized solely because of cesarean scars.

Three series of patients totaling well over 1,000 cases in whom the fourth to tenth cesarean section was attended with no mortality should allay this fear.

Cesaro-hysterectomy because of "defective scar" in the absence of dehiscence or rupture is empiric treatment which may be more risky than the consequences of a "defective uterus" left in situ.

The incidence of prematurity among patients having their fourth or greater number of cesarean sections, while appreciable, is no greater than among patients at lower parity.

The presence of adhesions between the bladder and lower uterine segment in high parity sections increases the incidence of classical sections. This conservatism probably decreases bladder injuries.

Spontaneous postcesarean scar disruption pathologically and clinically is strikingly different in its seriousness from that of other ruptures of the uterus. In assessing maternal deaths due to uterine ruptures, the postcesarean scar disruptions should be placed in a separate category from traumatic ruptures or spontaneous ruptures not in association with scars.

We agree with Cosgrove[19] that "there should be no limit to the number of cesarean sections provided the integrity of the uterus is maintained."

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A Possible New Sign in the Recognition of Listeriosis in the Newborn

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The present report suggests a possible new indicator sign in an infectious disease that is difficult to recognize clinically.

An increasing number of reports concerned with listeric infections have been published in recent years. For example, four-fifths of the 1,500 reported cases (until August 1962) were recognized in the last 5 years.[1] The first recorded isolation from man of the etiologic agent of listeriosis, *Listeria monocytogenes*, appeared in 1929.[2] The first isolation from a newborn was reported by Burn[3] in 1934. Several review articles[4, 5, 6] offer a good summary of our knowledge of listeriosis up to 1958. Other articles[7, 8, 9] on combined case reports have contributed to the understanding of this infection. A report of 29 cases by Hood[10] is especially significant because of the number of cases studied, and because of its discussion of the importance of early detection of the infection in the pregnant mother. In general, most of the cases reported in the United States are listeric meningitis in adults and children, and most of the cases reported in Europe are perinatal infections.

At the present time Gray[1] considers listeriosis to be the least understood bacterial infection occurring in man and animals. The lack of understanding is due to several factors, such as unawareness of the bacterium, which is often confused with a contaminating diphtheroid; the misconception that infection with *L. monocytogenes* is rare; the erroneous notion that listeric infections are always highly acute; failure to develop a serologic test, and the difficulty sometimes encountered in isolation attempts.[1]

The true incidence of listeriosis is not known, and it is probable that the disease is not rare but merely not recognized. For example, Gray has pointed out that if the results of a 1959 survey by the Massachusetts Department of Health were true for all laboratories, approximately half of the cultures of *L. monocytogenes* are not identified correctly. In the case reported by Wiener[6] the strain isolated from the patient was sent as a monthly survey specimen to 14 laboratories; only 5 laboratories identified the organism as *L. monocytogenes.*

Hood[10] stresses the importance of the prevention of the perinatal infection because of the very high mortality associated with transplacentally acquired septicemia. Since maternal listeriosis presents minimal symptoms or "flu-like" symptoms such as a slight temperature elevation and malaise, the first step in control of maternal listeriosis would be to teach the mother to seek medical attention when these apparently unimportant symptoms develop.

The present case report is of importance because the only abnormal finding detected before the infant's symptoms developed was a greenish amniotic fluid with no other evidence of septic infection upon gross examination of the placenta and membranes. A similar observation has been reported by Wiener,[6] but the significance of this finding was not discussed. We think that this observation should be included among the recommendations suggested by Hood as a presumptive sign of maternal listeriosis even in the presence of a healthy mother and an apparently healthy infant at birth.

Report of Case

A.K. was a 5 lb., 5 oz. male, newborn, colored infant, born at 35 weeks of gestation of a 19-year-old, gravida I, Para 0, woman. The pregnancy was followed in our obstetric clinic and was considered uneventful. No history of fever, malaise, or the slightest compromise of the good general condition of this mother was ever recorded. The membranes were ruptured in the hospital, and the amniotic fluid was observed to be "somewhat greenish" but transparent and without evidence of meconium débris or foul odor. The placenta appeared grossly normal and was discarded. The delivery was a normal and spontaneous one. The infant's condition at birth was considered good with an Apgar score of 8. He was first examined 3 hours after birth, and no abnormalities were found. He remained well for about 12 hours, when slight jaundice, some grunting respirations with subcostal retractions, and a temperature of 103°F were reported. Physical examination at this time revealed poor general condition, a "sick appearance," pale yellowish color, poor cry and activity, and poor muscle tone. The anterior fontanelle was soft, and the examination of the eyes, nose and throat was not significant. There was a tachypnea of 65 per minute, severe subcostal retractions, grunting respirations, and decreased breath sounds in both lungs; no rales or dullness could be detected. The heart had good tones and a regular rhythm of 140 per minute with no murmurs. The abdomen was soft, the umbilical cord appeared normal, and no hepatosplenomegaly was found. The grasp and Moro reflexes were poor, and there were no localizing central nervous system findings. No rashes, petechiae or ecchymoses were seen. The clinical impression was possible septicemia and possible bronchopneumonia. After blood, throat and urine cultures were obtained the baby was immediately given intramuscular Chloromycetin Succinate® at a dosage of 25 mg. per Kg. per day, placed in oxygen, 40 per cent, and isolated.

Laboratory Findings

The hemoglobin was 14.4 Gm. and the white blood cell count was 8,630, with 20 polymorphonuclears, 43 bandforms, 28 lymphocytes, 1 monocyte, 4 progranulocytes, 4 juveniles, 4 nucleated red blood cells per 100 white blood cells, and 1 plus toxic granulation. The reticulocyte count was 5 per cent. The total serum bilirubin was 6 mg. with 3 mg. of each fraction. A chest X-ray film revealed an increase in the bronchovascular markings with mottled generalized opacities throughout both lung fields compatible with bronchopneumonia. The blood culture was negative. The throat and urine cultures isolated pure cultures of an organism identified as *Listeria monocytogenes* with the following reactions: Gram positive, nonspore-forming, nonacid-fast, unencapsulated, motile rod which failed to liquefy gelatin or to utilize citrate or ammonium phosphate. Litmus milk slightly acid, glucose fermented promptly with acid and no gas production. Lactose, sucrose and maltose fermented slowly and no acid produced in xylose, mannitol or raffinose. Indole, hydrogen sulfide and acetylmethyl carbinol not produced; urea not hydrolyzed and nitrates not reduced. Organism catalase-positive and sensitive to the commonly used antibiotics when tested in vitro.

Clinical Course

The infant's condition deteriorated progressively with persistent respiratory distress and fever fluctuating between 101°F and 102°F. The infant had a poor sucking reflex, but no vomiting or diarrhea developed. At 24 hours of age half normal saline in 2.5 per cent dextrose by clisis was started to prevent dehydration due to hyperventilation and fever. Chloromycetin and oxygen therapy were continued. The infant's condition became progressively worse, and he died 36 hours after birth.

Pertinent Positive Autopsy Findings

Macroscopic: The lungs were of firmer consistency than normal, violaceous, and very congested. Areas of consolidation were felt, and on cut sections small yellowish areas going through the parenchyma were recognized. A moderate amount of bloody, frothy fluid extruded from the cut surface. The liver was enlarged, violaceous, and of firmer consistency than usual. Multiple cuts revealed punctiform areas of yellowish discoloration. The spleen was moderately enlarged but with no other gross abnormal features. The cranial cavity showed some subarachnoid hemorrhage scattered throughout the brain, especially in the occipital lobe.

Cultures taken from the lungs, liver, umbilical cord, and spinal fluid all yielded *Listeria monocytogenes.*

Microscopic: The lungs had very little air within the alveoli. The alveoli contained a material that stained deeply with eosin and had a slightly spongy appearance. Occasional polymorphonuclear cells were seen within this material. There was a marked proliferation of the septa of the alveoli. There was evidence of polymorphonuclear infiltration within and around the bronchi. The overall aspect of the lungs revealed infiltration with round cells and polymorphonuclear cells. The thymus contained small areas of infiltration with polymorphonuclear cells. The architecture of the liver was well preserved. In some portions and especially in the portal areas there was evidence of infiltration with round cells and plasma cells, and heavy infiltration with polymorphonuclear cells; in some other areas there were true microscopic abscesses. The architecture of the spleen was well preserved. There were small islets of polymorphonuclear infiltration and some other areas with necrosis and heavier infiltration. No abnormalities in the brain were found. In the meninges there was marked dilatation of the vessels which were filled with erythrocytes. The meninges proper revealed infiltration with round cells, some of them with characteristics of lymphocytes, others of monocytes, and some of plasma cells. However, no polymorphonuclear cells were recognized.

Maternal Findings

Listeria monocytogenes was isolated from the vagina of the mother 36 hours after delivery. Urine and blood cultures taken at this time were negative. An acute phase serum from the mother was tested in tube agglutination tests using *L. monocytogenes* suspensions of the strain isolated from the vagina as antigen. The titer obtained in this test was 1:1280. Although the mother remained completely afebrile and asymptomatic during the postpartum period she was given 1 Gm. of oxytetracycline (Terramycin®, oral) per day for a period of 2 weeks. Vaginal cultures after 2 weeks were negative for *Listeria*. A convalescent phase serum obtained from the mother 4 months after delivery yielded a titer of 1:640 when tested with the same antigen suspension.

Discussion

This is a case of a premature infant born of an apparently healthy mother; both infant and mother lacked even minimal symptoms of infection at delivery. A greenish but transparent amnionic fluid was observed without other gross signs of infection; the placenta appeared grossly normal.

The infant was well at birth with an Apgar score of 8 and remained well for a few hours until he rapidly developed progressing signs of respiratory distress and sepsis (fever, jaundice, "sick appearance"). The chest X-ray film was compatible with bronchopneumonia, and the throat and urine cultures yielded *Listeria monocytogenes*. Despite parenteral therapy with Chloromycetin and other supportive measures the infant's condition deteriorated rapidly and he died at 36 hours of age. The autopsy findings showed the formation of microscopic abscesses in the liver and meninges as well as bronchopneumonic changes. The cultures taken from the lungs, liver, umbilical cord, and spinal fluid were positive for *Listeria monocytogenes*.

Listeria monocytogenes may produce a variety of disorders such as meningitis, septicemia, infectious mononucleosis-like syndrome, perinatal infection, endocarditis, infection of the female genital tract, abscesses, pustular cutaneous lesions, and conjunctivitis. In general it is isolated most frequently in the newborn or small infant, pregnant women, and debilitated adults or children. The most significant infections are in infants, and they may acquire it transplacentally or from the birth canal during delivery. Transplacental infections are highly fatal and must be prevented. It has been shown experimentally that steroid therapy increases susceptibility to this infection.[11]

We are interested here mainly in the description of the perinatal infection and in stressing the presumptive signs of maternal infection. This particular form of the disease may occur at any time during pregnancy but is most common during the last trimester. The infant is either stillborn or born appearing more or less acutely ill. Hood[10] has proposed a presumptive correlation between symptoms at birth and the time when the infection was acquired from the mother. If the baby is well but develops the infection soon after the first week (the probable incubation period is considered to be between 8 and 12 days) he presumably acquired it during passage through the birth canal of his mother. The symptoms are usually those of meningitis. If the infection is acquired transplacentally the outcome will depend on the time of exposure and on the severity of the infection. The usual result is a dead fetus or the birth of a child (usually premature) who is more or less acutely ill. Usually the infant is very acutely ill and too sick to respond to therapy.

The symptoms in the newborn are those of severe septicemia with or without those of meningitis. Since anatomicopathologically there is usually extensive involvement of many organs, such as the lungs, liver, meninges, kidneys, spleen, lymph nodes and adrenals, the clinical picture is one of sepsis with variable signs pointing toward the system most extensively involved. Dyspnea, fever or low temperature, pallor and/or jaundice, vomiting, mucus-like stools, spasms, convulsions, and opisthotonos have been described. Occasionally a red skin rash or papules, a purulent conjunctivitis, or an infected meconium may be encountered. Smears and cultures of these areas may yield *Listeria monocytogenes*. The laboratory tests other than cultures are not diagnostic. The hemogram usually shows a leukocytosis with a shift to the left. Only in those cases of infectious mononucleosis-like disease will the peripheral blood show monocytosis.

In our case the syndrome was that of sepsis and respiratory involvement indicative of bronchopneumonia. The peripheral blood count, while definitely low for the average newborn, showed a marked shift to the left.

The most important diagnostic aid for the pediatrician in a case of neonatal listeric infection is the suspicion of a neonatal sepsis.

The strain of *L. monocytogenes* isolated in the present case was sensitive to all the common antibiotics. Culture studies indicated that the infection in the mother responded to oxytetracycline therapy. *L. monocytogenes* is usually sensitive to a wide range of antibiotics, and it is not rare to find strains that, at least in vitro, are sensitive to all the antibiotics tested. The literature indicates that tetracycline, particularly chlortetracycline, is the antibiotic of choice. Chloramphenicol and streptomycin are recommended as second choice. Some strains have been found resistant to penicillin and streptomycin, and some strains are resistant to all antibiotics.

We think it is important to emphasize the finding of a greenish amniotic fluid and/or placenta even without any other signs of infection in an apparently healthy mother and infant at birth. In our case and in Wiener's case[6] a healthy mother lacking even minimal signs of infection delivered a well baby. The only unusual finding was a greenish amniotic fluid (placenta in Wiener's case). Bacteriologists recognize a characteristic greenish color in colonies of *L. monocytogenes* on artificial culture media. It is not known, however, whether these in vivo and in vitro color phenomena are related.

In any suspicious case of perinatal listeriosis smears and cultures should be made from the blood, spinal fluid, urine, throat, meconium, amniotic fluid, and placenta, maternal genital tract, and lochia.

Since the clinical features of listeriosis are not so well defined that a diagnosis can be made on clinical grounds, the actual diagnosis depends on the alertness of the obstetrician, pediatrician, and bacteriologist.

Summary

A case of septicemia of the newborn due to *Listeria monocytogenes* has been reported. The pathologic anatomy has been described. A brief description of the bacteriology and the clinical form of perinatal infection with special emphasis on neonatal septicemia has been given. A greenish discoloration of the amniotic fluid and/or placenta with no other evidence of infection may be due to maternal listeriosis.

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Cardiac Evaluation of the Surgical Patient

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One of the most difficult clinical evaluations in medical practice is the judgment by the surgeon, the anesthetist, and the internist prior to major surgery. This problem may be simple when surgery, as an elective procedure, is contemplated on the young and healthy individual; but when surgery is an urgent necessity and is coupled with a history of cardiac disease (decompensation, cardiomegaly, cardiac murmurs or arrhythmias) and further complicated by advanced age, the problem is very complex.

In elective surgery in an assumed healthy individual, nothing more than a thorough cardiac history and physical examination need be done, and, if normal, no special limitations or precautions need be taken.

What about the cardiac history? We all know the usual questions and the obvious answers which would alert anyone to cardiopathy, but a few very simple but inclusive questions might save a lot of time. First, ask your patient, "Do you know of any heart trouble you might have had recently or at any time during your life?" With today's cardiac-minded populace, educated by daily periodicals and television, and encouraged by our high incidence of heart attacks, such a question would recall the most innocuous extrasystole. Second, to ferret out incipient or early cardiac decompensation, "Do you awaken in your sleep, and, if so, how soon after getting asleep?" Cardiac edema will invariably redistribute itself into the pulmonary system within 2 or 3 hours after the horizontal position is assumed and is a frequent type of early nocturnal insomnia. Third, "Have you noticed any slowing down or limitation of your physical abilities over the past 6 to 12 months?" This question may give a better insight into coronary artery disease than the usual one for chest pain or discomfort, since many a "coronary" patient simply notes a profound exertional dyspnea as his first major evidence of coronary impairment.

A history of the use of drugs is also of some help in these cases, because at times we lose sight of the length of action of some drugs in common use today, including such cardiac drugs as digitalis, reserpine, thyroid extract, antithyroid drugs, steroids, amine oxidase inhibitors, diuretics and long-acting quinidine and anticoagulant preparations. Most of these drugs offer no surgical hazard if their use is known in advance. According to Lown and associates[1] the combination of digitalis and reserpine could be troublesome because reserpine enhances the toxic action of digitalis on the atrium, A-V conduction system and ventricles in patients with atrial fibrillation. Eight of 9 patients with atrial fibrillation receiving reserpine showed advanced toxic rhythms during rapid digitalization; only 1 responded in this manner when reserpine was not given. Patients receiving reserpine were unable to tolerate full doses of acetyl strophanthidin. Reserpine increases cardiac sensitivity to carotid sinus stimulation in all patients, regardless of heart rhythm, and is most marked when the patient receives digitalis as well. Reserpine does not prevent significant acceleration in the ventricular rate after exercise.

The preoperative cardiac physical examination centers about 3 factors: (1) size of the heart, (2) murmurs, and (3) rhythmic disturbances. An abnormality in any of these categories deserves the fullest attention and should be considered a deterrent to surgery until proved otherwise. Also, beware of the innocent murmurs, of harmless arrhythmias, and of cardiomegaly which is of a minor degree and readily explainable.[2]

A forceful and localized apical impulse that is displaced laterally and downward ordinarily suggests left ventricular enlargement, whereas a diffuse precordial impulse and left lower parasternal lift, which may be accompanied by a precordial bulge, strongly indicate right ventricular enlargement.

The age of the patient could be a real complication to surgery. Most oldsters with fairly normal cardiovascular hemodynamics require little more than surveillance during surgery. However, even in the absence of frank cardiac decompensation if we observe some cardiomegaly the use of digitalis can afford a degree of cardiac insurance, according to Dean Mason[3] of the National Institutes of Health. In a failing heart the contractile force of the myocardium can be increased up to 160 per cent by digitalis. In the nonfailing heart the myocardial contractile force has been demonstrated to improve by 14 to 24 per cent depending on the work load imposed. In addition, there is a general increase in vascular tone and constriction of the walls of the systemic arterioles which augment the cardiac output and efficiency.[4] Hence digitalis is indicated in any condition in which the vascular burden may be increased, such as surgery or the imposition of an added fluid volume to a heart that may be operating on the verge of decompensation.

What are the dangers of digitalis in these cases, and how much digitalis should one give? There is no fixed dose of this drug. Although the range of digitalization is known for each type of preparation, the best guides are an abolition of the signs of cardiac deficiency and a slowing of a rapid rate. But if one is uncertain, as often may be true, of adequate digitalization, it is best to proceed to the point of minimum toxicity and then recede.

Cardiac murmurs are always important unless they are transient, cardiorespiratory venous hums, or carotid artery bruits. Young children and adolescents may demonstrate a midsystolic vibratory murmur which is rarely transmitted to the axillae or back and is more prominent supine. Its genesis is uncertain, and it may be mistaken for a small interventricular septal defect since it is most prominent along the left lower sternal border or at the apex. Another innocent murmur is the pulmonic ejection murmur, again prominent in young adults and many children, especially in those with a thin chest wall. It is associated with the ejection of blood into the pulmonary artery and is heard in the second and third left interspaces parasternally. This may be confused with any condition having a large right ventricular stroke volume, such as atrial septal defect or mild isolated pulmonary stenosis. Patients with a murmur and a condition causing excessive pulmonary blood flow will usually have frequent respiratory infections, poor growth and development, easy fatigability, exertional dyspnea, and often tachypnea even at rest.[5] Such findings in an acyanotic individual indicate a marked left-to-right shunt such as occurs in ventricular septal defect, patent ductus, large atrial septal defect, or aortopulmonary septal defect.

In themselves, a cardiac history and physical examination are relatively brief procedures for the internist. In most cases in which expert advice is indicated preoperatively, there is also a need for auxiliary and supplemental aid, e.g., blood count, blood volume, X-ray films, electrocardiogram, and other procedures which may require time. It is my suggestion that the consulting internist be given adequate time to coördinate all of his needed studies before the surgery is scheduled. This could be best expedited by the surgeon in his own office, by a 5-minute cardiac history, and by an even shorter auscultation of the heart. Little can be accomplished by the abnormal electrocardiogram or chest X-ray films (A-P and lateral) which reaches the chart 12 to 24 hours postoperatively or postmortem.

The finding of an arrhythmia presents a major problem to the surgeon. Should he proceed in the face of tachycardia? Naturally, in the case of a patient susceptible to recurrent episodes of supraventricular tachycardia no one would doubt the value of prophylactic digitalization, but if the patient has a regular rhythm of 100 to 120 it might be best to consider factors other than the heart as a cause. A look at the temperature chart as well as the electrocardiogram may be more revealing. If the patient is taking digitalis, is he taking too much? Bigeminy or trigeminy and bidirectional extrasystoles are good indications of digitalis intoxication. Another more recently described arrhythmia resulting from digitalis overdosage is paroxysmal auricular tachycardia with block, and whether it is due to digitalis or other causes may not be readily distinguishable from the electrocardiogram. In such cases of confusing tachycardia it may be necessary to give added digitalis until the problem of under- or overdigitalization is solved. A rapidly acting drug such as acetyl strophanthidin (0.5 mg.) repeated at 15- to 20-minute intervals, and rapidly reversible, is most useful. Digitalis is a double-edged sword, and a routinely digitalized patient may succumb to ventricular tachycardia and ventricular fibrillation, particularly when the drug is pushed beyond what should be its normal confines.

One of the most common arrhythmias which is complained of by the patient and is frequently found on a routine presurgical cardiac evaluation is the premature ventricular beat. This arrhythmia, diagnosable with simplicity by electrocardiography, is sometimes confusing by auscultation, particularly when occurring with great frequency. The cause may be very simple. Preoperative anxiety or fatigue would account for about 90 per cent of those found prior to surgery, and the greater percentage found under other circumstances would inevitably follow excess use of caffeine and/or nicotine or fatigue. A few, as in the case of auricular fibrillation, may be hereditary and are totally unexplainable. Physical exertion, while having little aggravating influence on premature ventricular beats, decidedly aggravates auricular fibrillation. Yet premature ventricular beats may be an auspicious omen of a diseased heart or of a drug toxicity when they occur in groups, such as bigeminy or trigeminy. It has been stated by Dr. Lewis A. Soloff of Temple University that the characteristics of the ventricular premature beat on the electrocardiogram can give some evidence of the diseased heart. He describes 4 features which if present singly or entirely could indicate cardiopathy: a widening of the QRS complex beyond 0.18 sec., an unusually bizarre pattern of depolarization and/or repolarization, or an appearance of the extrasystole to resemble a pattern ordinarily seen in myocardial infarction. Hence, when premature ventricular beats are detected it would be wise to assess their meaning and prognostication. The electrocardiogram is an invaluable aid in this particular regard.

Another interesting cardiac disease which is coming more to the forefront is myocarditis. In the presurgical evaluation a patient with myocarditis may be completely asymptomatic, or he may have a simple, unexplained cardiomegaly, unexplained arrhythmias or conduction disturbances as shown on the electrocardiogram, or unexplained congestive heart failure. If a patient is found to have a combination of 2 or more of these the diagnosis becomes probable. There may be little or no past history to suggest this entity, or it may stem, as a smoldering fire, from any of many types of viral infections. One local cardiologist[6] has recently been quoted as seeing 3 to 4 such new cases each month.

The importance of suspecting this type of heart disease preoperatively is obvious. The patients generally carry a very poor prognosis. They are susceptible to all arrhythmias and are good candidates for sudden death even under nonstressful and ideal conditions. Hence, they must never be subjected to any avoidable elective surgery, and if surgery is obligatory must be carefully evaluated and treated with the utmost of good cardiac care. In the active stages of the disease bed rest of up to 12 to 18 months is often necessary.[7] The value of digitalis when cardiac decompensation and a definite gallop rhythm are present is unquestioned. What may be questioned is the use of steroids and anticoagulants, since either may be rationalized as good under certain circumstances. In myocarditis a loud diastolic rumble is often heard simulating mitral stenosis, and this distinction is important preoperatively. An opening snap while frequent in rheumatic valvular disease is absent in myocarditis.

Summary

The preoperative patient could and should be considered a cardiac problem until proved otherwise. In general there is no problem if the history is normal and there are no murmurs, arrhythmias, or cardiomegaly. A middle-aged to elderly patient with frank or borderline cardiomegaly sustains surgery best if digitalized and maintained on digitalis during surgery and convalescence. One should be cautious in the use of drugs, the duration of their activity, and their effect on the heart, as well as their conformity or disparity with the action of digitalis. Myocarditis is on the increase and generally contraindicates all elective surgery. Finally, after a medical history, physical examination, and laboratory aids one must try to evaluate the patient's cardiac reserve and, when necessary and possible, try to improve this reserve prior to any stressful procedure.

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Indications for Blood Transfusion of the Providence Hospital Staff

A Nine-year Review

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Physicians agree on the two principles that whole blood transfusions should be limited to patients with valid medical indications and that each recipient is exposed to a number of dangers from the transfusion. Our problems arise in the application of these principles. What are valid medical indications for a transfusion? What real benefits are achieved by a transfusion? What are the potential hazards to the recipient of a transfusion? Does the need for a transfusion and the benefit expected justify exposing the recipient to the hazards of a transfusion?

In 1953 these questions were considered by the medical staff of Providence Hospital.[1] A study of the patients transfused in 1952 resulted in the following conclusions: 1. A number of reactions occurred in patients who probably should not have been transfused. 2. There was an evident lack of uniform criteria for ordering a transfusion. 3. Most physicians were not cognizant of the potential hazards transfusion presents to the recipient. The first phase of the educational program was information on the potential dangers, namely, allergic reactions, pyrogenic reactions, circulatory overload, air embolism, hemolytic reactions, transmission of diseases, and iso-immunization problems. The present level of medical knowledge and skill is not adequate to eliminate all of the potential hazards. When all known practices are employed to assure maximum control the incidence of transfusion reactions will be in direct ratio to the number of transfusions administered. The consensus of the medical staff established the principle that each recipient is exposed to a number of dangers which can be justified only when a valid medical indication exists for the transfusion. The second phase of the program was the development of valid medical indications. After consideration, a number of designations were disqualified as indications and included the following: to serve as a tonic, to build body defenses, to combat infections, to serve as a nutriment, to improve the patient's sense of well-being, to provide iron, to satisfy the desires of the patient, to satisfy the wishes of the physician wanting to do something, and other similar reasons. These objectives can be accomplished better and more safely by the use of therapeutic agents other than whole blood. The consensus of the medical staff was that there were 2 major valid indications for whole blood transfusions, namely, to replace needed blood volume and for oxygen transportation.

At the end of 1953 a list of "Indications for Blood Transfusion" was developed and adopted as a part of the by-laws of the medical staff. In 1956 the indications were amended, and the current regulation is listed.

1. To replace needed whole-blood volume (in hemorrhage, shock, burns, heart-lung pump, etc.)
2. For oxygen transport
   - A. Anemic patient, otherwise well, must have 7 or less Gm. of hemoglobin per 100 ml. of blood.
   - B. Anemic patient with complications affecting oxygenation, such as cardiac insufficiency, respiratory embarrassment, etc., may be transfused if hemoglobin is less than 10 Gm. per 100 ml.
   - C. Anemic patient who will undergo anesthesia may be transfused if the hemoglobin is less than 10 Gm. per 100 ml.
3. Exchange transfusions
4. Fresh whole blood is indicated only in rare instances of dyscrasias in which a labile element is important.

The original indications of 1953 specified 8 Gm. of hemoglobin for the uncomplicated anemia and 11 Gm. for the anemic patient with conditions interfering with oxygenation of the blood or who will undergo anesthesia.

Results of the "Indications"

The "Indications for Blood Transfusion" have been followed from 1953 to the present (table 1).

TABLE 1: Use Factor in Blood Transfusions at Providence Hospital, 1953–1962

Year	Hospital Beds	Surgical Operations Performed	Hospital Patients	Units Blood Transfused	Use Factor
1953	250	5,195	12,786	3,024	0.237
1954	250	5,403	12,500	2,390	0.191
1955	250	5,770	12,866	2,229	0.173
1956	350	6,770	15,011	1,970	0.131
1957	350	8,749	19,817	2,353	0.119
1958	350	9,113	20,535	2,438	0.119
1959	350	9,403	20,907	2,505	0.120
1960	350	8,785	21,045	2,317	0.110
1961	350	8,733	21,045	2,286	0.108
1962	350	9,079	22,237	2,379	0.107

In 1956 the Hospital moved into a new building with an increase of 100 beds. During the transition period there were several months of decreased patient census, but the net result of the increased bed capacity should have resulted in increased blood usage. That no increase in patient transfusions developed can be largely attributed to the changes made in the indications. The "Use Factor" is determined by dividing the units of blood transfused by the number of patients hospitalized. The "Use Factor" is a very convenient measurement of blood usage, and the staff is indebted to Colonel W. H. Crosby for suggesting it.

Discussion

The use of the "Indications for Blood Transfusion" adopted by the medical staff of Providence Hospital has proved successful. The volume of blood transfused annually has decreased materially from 1953 to the present, and this result is striking when the increased patient load is considered. During the period under consideration the type of patient hospitalized for treatment and the type of operations performed did not substantially change, yet the "Use Factor" decreased from 0.237 to 0.107. The progressive and gradual reduction in the "Use Factor" reflects an increasing awareness and acceptance of the indications by the entire medical staff. During this period we are confident that no patient who would have benefited by a transfusion was denied a transfusion. The problems represented by the conclusions derived from the original study of transfusion reactions have been largely corrected by medical staff action, since the staff is aware of the potential hazards of transfusions, uniform criteria for the indications of whole blood transfusion have been established, and in the absence of a valid indication patients are not transfused.

The indications are easy to remember and are easy to apply. The indications are not obligatory; that is, a patient who presents one of the criteria need not necessarily be transfused, particularly in the group in which the indication is oxygen transportation. A number of anemic patients are admitted with hemoglobin values under 7 Gm. and are diagnosed, treated specifically, and discharged without blood transfusion. We have not determined whether or not the present indications for the anemia group should be lowered further, even though in the individual application it is frequently done by the attending physician. We are positive that the decreased levels established in 1956 were proper and have proven sound in the clinical application. The most difficult indication to use is the replacement of needed blood volume. In the nonbleeding patient a blood-volume determination is the best guide, but in the actively bleeding patient the clinical judgment of the attending physician must be decisive.

The available blood supply, plentiful or scarce, should never be a factor which determines whether or not a transfusion is medically indicated. It may determine whether or not an indicated transfusion will be given.

It is impossible to obtain valid statistics for the incidence of all of the hazards of whole-blood transfusions. A number of the potential hazards can be decreased by high standards of blood-bank practices, such as the medical screening of donors, typing and compatibility procedures, blood inspection, etc. It is impossible to eliminate all the hazards. Approximately 3,000 Americans die every year as the result of blood transfusions,[2] and such deaths rank with appendicitis and anesthesia as a cause of death. About 2 per cent of recipients experience an allergic or pyrogenic reaction which ordinarily is not dangerous but may be in certain circumstances. The number of supposedly healthy donors who are carriers of the hepatitis virus is in the order of 0.2 to 0.5 per cent.[3] The reports of clinical hepatitis occurring in recipients vary widely but may be considered to average between 0.3 and 0.8 per cent,[4, 5, 6] and the incidence of subclinical hepatitis is not evaluated. A recent report states that the overall attack rate for all patients transfused with blood only was 3 per cent, with the average patient receiving 3.4 units of blood, and, while no deaths due to hepatitis occurred under the age of 36, the mortality rate among those developing hepatitis after the age of 40 was 23 per cent.[7] The recipient of each transfusion receives compatible blood (not identical blood) and thus receives a number of antigens capable of causing later problems due to iso-immunization. Although the actual incidence of these problems is largely unknown, there are frequent reminders in certain cases of hemolytic disease of the newborn and difficulties in later transfusions.

Summary

In 1953 the medical staff of Providence Hospital adopted in its by-laws "Indications for Blood Transfusion," and the effectiveness of this program in the past 9 years has been evaluated. In the period from 1953 through 1962 the application of the indications has resulted in a decreasing "Use Factor" (units transfused annually divided by the number of patients hospitalized) from 0.237 to 0.107. The benefits achieved have limited the transfusions to patients having valid medical indications and have protected the patients from the hazards of unnecessary transfusions. The "Indications for Blood Transfusion" have proved to be sound and can be employed by all physicians.

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Report of a Case of the Zollinger-Ellison Syndrome Associated with Multiple Endocrine Adenomas

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THE ZOLLINGER-ELLISON SYNDROME was described in 1955[1] and is characterized by (a) gastric hypersecretion and hyperacidity, (b) severe recurrent and often atypically located peptic ulceration, and (c) the presence of 1 or more nonbeta-cell, islet-cell adenomas of the pancreas.

Many of these pancreatic adenomas have been associated with other endocrine adenomas, which often have functional activity.[2]

The following case (1951) was thought to be an example of peptic ulceration secondary to a functioning parathyroid adenoma. However, on review, it undoubtedly represents a case of multiple endocrine adenomas with the Zollinger-Ellison syndrome.

Report of Case

J. C., a 28-year-old woman, was admitted to Providence Hospital in May 1951 with an episode of acute renal colic. She was found to have bilateral renal and ureteral stones. She had passed a stone several years before. She had had recurrent episodes of vomiting for years and diarrhea once or twice each month. She was obese with most of the fat distributed over the lower abdomen and hips. Her eyes were prominent. Bilateral costovertebral angle tenderness was noted. The serum calcium was 12.0 mg. (normal 9.0–11.0) and the serum phosphorus 3.2 mg. (normal 2.0–5.0). Intravenous pyelogram showed bilateral renal calculi with no excretion from the right kidney. The final diagnosis was bilateral renal stones with right hydronephrosis.

The second admission was in July 1951 for treatment of the kidney stones. A calculus was removed from the left ureter cystoscopically, and a right nephrectomy was done. The pathologist's report was severe pyonephrosis of the right kidney. A stone was found imbedded at the ureteropelvic junction. Analysis of the stone showed it to be calcium ammonium oxalate.

The third admission, in August 1951, was for investigation and treatment of severe dysphagia, which was associated with pain in the epigastrium and in the right anterior portion of the chest. There had been a 10-pound weight loss during the 3 weeks' duration of these symptoms. In the hospital these symptoms became intractable, and the patient developed fever, pneumonitis and pleural effusion. Esophagoscopy showed an area of ulceration of the posterior wall of the lower esophagus. Biopsy of this lesion showed chronic inflammation. The course was steadily downhill, leading to death on October 25, 1951.

A significant laboratory finding during this final admission was a greatly reduced serum protein level. The 3 determinations recorded were: total protein 3.8, albumin 0.8, globulin 3.0; total protein 3.9, albumin 1.2, globulin 2.7; and total protein 4.1, albumin 1.5, globulin 2.6; (normal values: total protein 6.0–7.0 Gm., albumin 4.5–5.0 Gm., globulin 1.5–3.0 Gm.).

The cause of death was a perforated peptic ulcer of the esophagus at the esophagogastric junction with secondary mediastinitis. Multiple benign parathyroid adenomas, adenomas of the thyroid, an islet-cell adenoma of the pancreas, and nodular hyperplasia of the adrenal glands were found. The pituitary gland was not examined.

Discussion

In this syndrome the primary abnormality caused by the nonbeta-cell adenoma appears to be the large volume of acid secretion produced by the stomach. The finding of a 12-hour night volume of 2,000 c.c. or more of gastric secretion is one of the very few laboratory tests which are helpful in the diagnosis of this condition.

This gastric hypersecretion is undoubtedly important in producing the peptic ulceration which typically occurs in the Zollinger-Ellison syndrome. It also is responsible for other syndromes which have been reported. Intractable diarrhea, usually watery but occasionally with steatorrhea and malabsorption syndrome, has been reported. This is thought to be due to irritation of the small intestinal mucosa, causing increased motility, and to interference with the activity of digestive enzymes by the lowered pH of the intestinal contents caused by this acid secretion.

Other consequences of this gastric hypersecretion are hypokalemia, causing muscle weakness, and even nephropathy.

The pathogenesis of the gastric hypersecretion has not been completely worked out. However, it appears to be due to the secretion of a gastrin-like (but 40 times more potent) substance which has been isolated from some of the nonbeta-cell adenomas removed at surgery.[3]

The case being reported certainly fulfills 2 of the 3 criteria of Zollinger and Ellison, i.e., the severe, recurrent, atypically located peptic ulceration, and the finding of a nonbeta-cell pancreatic adenoma. The history of recurrent diarrhea is suggestive clinical evidence that the third criterion of gastric hypersecretion was met also. No actual measurements of gastric secretion or acid production were made, however.

The low serum protein found in this case has interesting aspects. Perhaps the Zollinger-Ellison syndrome is another cause of protein-losing gastroenteropathy. The serum calcium value is affected by diminution in the serum protein. The calcium value of 12.0 mg. in this case means a greater increase than is apparent because the normal value for serum calcium at a serum protein level of 4.0 Gm. is 7.0–9.0 mg.[4]

The finding of the parathyroid and thyroid adenomas in addition to the nonbeta-cell islet adenoma places this case of the Zollinger-Ellison syndrome in the group of those due to multiple endocrine adenomas.

Summary

A case of multiple endocrine adenomas with the Zollinger-Ellison syndrome and hyperparathyroidism has been reported, and the possible significance of the low serum protein value in this case has been discussed.

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PRESIDENT'S PAGE

WE NEED A NEW HOME

Our present Medical Society headquarters building was a magnificent accomplishment when it was built 42 years ago. It has served the Society well, and with the additional space at 1710 M Street for offices increasingly complex activities have been carried on under its roof. Few changes have been made in the original building since its dedication in January 1921.

The time has come that we must regretfully conclude that the Society headquarters has outlived its usefulness as a location for administrative staff and meetings. The auditorium is too large for the sectional and small specialty society meetings which now constitute the scientific activities of the Society, and many of these have wandered off to hotels and other meeting places. The building as a whole cannot be properly heated or air-conditioned. Plumbing is obsolete and maintenance a continuous battle. Parking, either by day or night, is rapidly becoming nonexistent in the area.

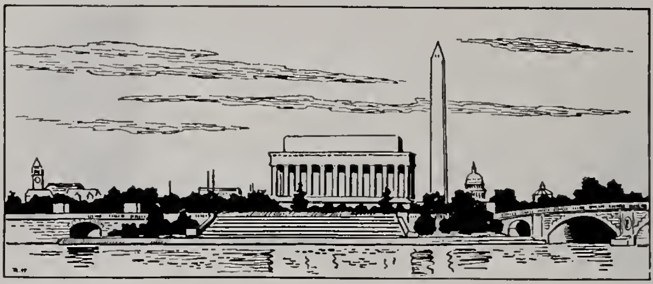
To remodel would be costly, necessitate a heavy membership assessment, and would therefore be a poor investment. The Society needs a modern, efficient building, one which will afford suitable assembly rooms for the organizations which need them, with luncheon and dining facilities. Parking space must be provided. A studio for television and radio programs should be included. The administrative staff should be housed in functionally arranged offices.

The House Committee, under the capable chairmanship of Dr. Victor R. Alfaro, has worked industriously to explore all possible solutions to the problem and has recommended the best in its opinion. It then falls upon the Executive Board to take this up with the Society's membership.

It is of paramount importance that the membership, individually and collectively, recognize and admit that there is a primary problem.

Further, it must be realized that the membership as a whole cannot act advantageously in consummating the line of action finally chosen. This will have to be delegated to an agent, logically the Executive Board. If your representatives have any chance of acting in the best interests of the Society it can only be with resolute support from the membership. Let's have new headquarters of which we can all be proud. Get behind the House Committee and the Executive Board and let them get this done.

R C Corley



EDITORIALS

Changes in the Practice of Nursing*

The growing number and variety of institutions and agencies now required to provide care have significantly affected the practice of nursing. At the turn of the century nurses worked primarily in the home; today they practice in many settings. Nurses in hospitals not only give direct service to patients but also serve in leadership positions as administrators of nursing service, hospital administrators, and supervisors of nurses and auxiliary workers. In nursing homes nurses provide professional health services for the chronically ill. In public health agencies nurses' work includes the promotion of community and family health, the prevention of disease, and home care of the sick. Nurses also serve in industry, and in Federal, State, local, and international health agencies.

Changes in medical practice require better coördination of specialized professional and technical services needed by many patients. Specialized services include those provided by the medical social worker, the physical therapist, the occupational therapist, the clinical psychologist, the laboratory and X-ray technician, the dietitian, and many others. These people must work together with the physician and the nurse as a team if they are to be truly effective. As a member of the team the nurse often has an important role in scheduling and correlating the work of other specialized workers in the day-to-day care of the patient. If some of the specially trained people are not available the nurse must help provide services ordinarily given by them.

Physicians are delegating increased responsibilities to the professional nurse. World War II gave impetus to the use of nurses for carrying out certain procedures, e.g., giving intravenous fluids, formerly performed by the physician. Today the nurse when adequately trained is able to act on her own initiative in taking emergency measures, e.g., relieving respiratory distress in postoperative or other critically ill patients. With development of new techniques she will be expected increasingly to perform highly specialized tasks and to use independent judgment in meeting her responsibilities.

As the responsibilities of the professional nurse have increased, practical nurses and aides have been recruited to assist the nurse. The licensed practical nurse, who now completes a training program of 1 year or more, has found a role of increased importance in performing the simpler nursing care services. Nursing aides, who usually have limited on-the-job training only, are widely used to supplement the services of professional and practical nurses. They can perform many routine and less exacting functions well. However, the rapid increase in auxiliary workers and their use for many tasks that are beyond their competence pose a serious threat to the quality of nursing service. Aides must be properly instructed and supervised. Professional nurses by and large have not had the time and skill for such teaching and supervision.

These are a few of the factors that have placed pressure on the available supply of nurses in the health agencies of our Nation. Medical care will continue to expand and change. Institutions will become more and more complex. A variety of persons with different levels of preparation will be needed. Professional nurses will be expected

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* Reprinted from Toward Quality in Nursing: Needs and Goals—Report of the Surgeon General's Consultant Group on Nursing. Washington, D. C.: U. S. Government Printing Office, 1963, p. 4.

Opinions expressed in contributions to the Editorial Section are those of the writers and do not necessarily reflect the views of the Medical Society of the District of Columbia

to keep pace with change and growth. They must assume the roles of leaders in nursing and partners of the allied professions. They must assume the nursing-teaching-managerial functions essential to patient care and modern community organization for health care.

The Hospital Medical Library

Until a few years ago the medical library in many hospitals was merely a collection of books of various ages in a dark room, frequently with the door locked, and without a librarian in charge.

The Joint Commission on Accreditation of Hospitals has undoubtedly awakened the hospital authorities to the necessity of modernizing the medical library and its contents, providing competent librarians and appointing a Library Committee that meets regularly and authorizes the purchase of up-to-date reference books, periodicals, and related medical literature.

Since this progressive practice was put in operation the character of the hospital library has completely changed. It has become an active center in the institutions and has assisted the staffs in research, writing and has broadened their medical knowledge. This is particularly evident among the foreign interns and residents who are now employed in almost all hospitals.

In a well equipped library old books are replaced with new ones annually and medical material is kept current; by using such a library the expense of maintaining a private library is greatly reduced.

The Second International Congress on Medical Librarianship meets in Washington, D. C., June 16 to 22, 1963; 800 members of the Medical Library Association, including some 250 or more from areas outside of North America, are expected to attend. The first Congress was held in London, England, in 1953.

The Medical Library Association is an active and growing organization, and Washington is fortunate in being chosen as the meeting-place of the Second Congress. An excellent program will be conducted by outstanding members in this field from the entire world. Every medical librarian in this city should attend some of the sessions.

C. S. W.

"Mirror, Mirror on the Wall—"

Members of the District Medical Society won't have to consult the mirror on the wall to assure themselves that they have not aged a year since medical school days if they will take advantage of the recent offer made to the Medical Society by Chase Studios.

Chase Studios, which has enjoyed an enviable reputation in Washington for over 25 years, has submitted an offer to the Medical Society whereby members can come in by appointment for a free sitting in order to be included in a new group picture. The last group picture was made in 1954.

Members will not be required to purchase photographs and will not be pressured into doing so, according to an agreement between the Society and the Studio. Of course, the Studio hopes the likenesses will be so favorable that doctors will want to secure a number to give to their wives (or husbands), their children, their colleagues and friends. Of course, "she" will always think him the handsomest "of them all," but (mortality statistics for the sexes being what they are) how is she going to prove that to her grandchildren and the great "grands" if she does not have the evidence? Further, the photo for the family is sure to occupy a place of honor in the home and will show the doctor how he looks to the world when he puts on his best face—an incentive each day to look his best!

In other words, members of the Society are urged to make an appointment with the Studios for a sitting, make a choice of the proofs, and return them promptly to the Studios. The new composite will hang in the Medical Society's building where previous ones have always fascinated visitors to the Society's Executive Offices. Each one looks for "my doctor" first.

Chase Studios, at 19th and M Streets, N.W., is in close proximity to the Medical Center and to many other downtown medical buildings and offices. It is open 6 days a week, Monday through Friday, 9 a.m. to 5:30 p.m., and Saturdays, 9 a.m. to 1 p.m. Or, the Studios will arrange to have one of its staff present at a medical meeting to take photos of individual doctors if an officer of the sponsoring organization will make the arrangements. However, the location of the Studios and the hours make it easy for doctors to drop in for the few minutes a sitting will take. Why don't you call Federal 8-2400 for an appointment now?

Scientific Exhibit for the 1963 ASA

One of the prime purposes of the ANNUAL SCIENTIFIC ASSEMBLY is to offer the practicing physician a means for keeping pace with medical progress. Obviously, this is not his only means but it can be a very helpful and practical one. The value of the ASSEMBLY is greatly enhanced by having scientific exhibits of high quality. In the past few years our ASSEMBLIES have been fortunate in securing many exhibits that were interesting and instructive. In this respect, it is hoped that the 31st ANNUAL SCIENTIFIC ASSEMBLY will be no exception.

In addition to the applications for exhibits that are always sent to every Active and Associate member, the Committee has sent a special invitation to every medical school, hospital and medical installation in the Washington Metropolitan Area, urging them to participate in this phase of the ASSEMBLY.

The Committee this year consists of physicians who have shown exhibits and they are indeed familiar with all the problems, the satisfaction, and even the heartaches and frustrations that often accompany "scientific exhibiting." While the Committee has no financial resources, it is willing to give advice, suggestions and any assistance it can to any prospective exhibitor.

In the selection of exhibits, emphasis will be placed on those exhibits which represent original work and those that are of an instructive or practical nature. We hope to have as many exhibits as possible from the Active and Associate members of the Society.

The Committee would like to be informed of any exhibit which a member might think is meritorious and which has not been shown in the Washington area. The Committee is also open to any other suggestions which might help to achieve our objectives.

RAYMOND A. OSBOURN, M.D.
Chairman, Committee on Scientific Exhibit,
Annual Scientific Assembly

The Management of Grief—Pertinent Publications

"Grief," the subject of the Second Edward Young Davidson Lecture on Religion and Medicine, was delivered before a most receptive audience of clergymen and physicians on November 8, 1962, by Dr. Erich Lindemann, eminent Professor of Psychiatry of Harvard Medical School. Many of those present expressed interest in receiving a copy of the lecture, but, unfortunately, it was not recorded. Dr. Lindemann did furnish a résumé of the talk, which was published in the February issue of the MEDICAL ANNALS.

In response to a request, Dr. Lindemann has now sent the Editorial Offices a list of references on this subject. It follows for those of our readers who may wish to pursue this subject further.

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RECEIVING AMA-ERF CHECKS from Dr. Karl C. Corley (left), President of the Medical Society of the District of Columbia, March 29, are the three Deans of the Medical Schools—(left to right) Dr. Walter C. Hess, Georgetown University; Dr. John Parks, George Washington University; and Dr. Robert S. Jason, Howard University.

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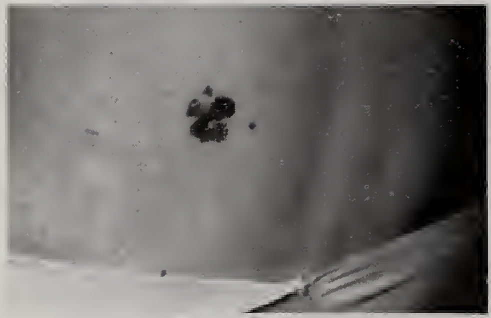
World's Largest Voluntary Health Plan?

The Federal Employees Health Benefits Program, according to the U. S. Civil Service Commission, is the world's largest employer-sponsored voluntary contributory health program. Annual premiums amount to $350,000,000, with 38 per cent paid by Government and 62 per cent by employees.

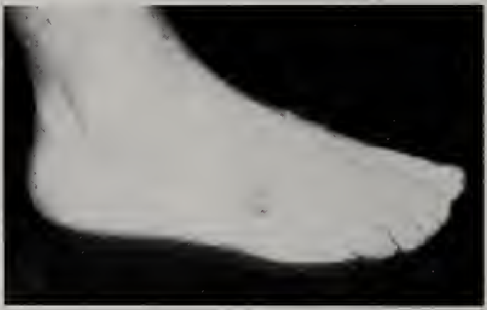
A total of 6,003,000 persons are now covered. This includes 1,921,000 Federal employees, 80,000 annuitants and 4,002,000 dependents. Yet this plan accounts for only about 4 per cent of the total number of persons in the U. S. covered by health insurance.

A Service Benefit Plan was selected by 1,101,401 enrollees; an Indemnity Benefit Plan by 497,301.

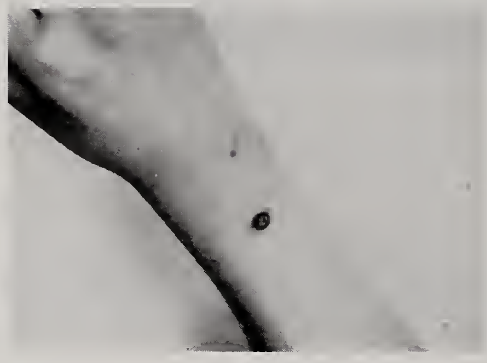
What is your diagnosis?



No. 1—Patient complained that the mole on his back had suddenly become darker in color in one area.



No. 2—Patient complained that the mole on his foot was constantly being irritated by his shoe.



No. 3—Patient complained that the mole on his forearm had been bleeding.

Indications for Removing Moles:

1. Any change in color, especially getting darker.
2. Bleeding or discharge.
3. Itching.
4. Recurring trauma.

A film, "Moles and Melanomas" is available for showing to physicians.

Call or Write

American Cancer Society
District of Columbia Division, Inc.
810-18th Street, N.W.
Washington 6, D.C.
EXecutive 3-3690

Diagnosis: No. 1 - Malignant Melanoma
No. 2 - Intradermal Nevus
No. 3 - Malignant Melanoma

England and Its Aged

THEODORE WIPRUD*

Washington

For nearly two decades Britain has wrestled with the problems of its aging. In a survey of the over-65 population in England and Wales made by the Ministry of Health in 1954 it was determined that there were 17 in this age group for every 100 persons between the ages of 15 and 65. It was estimated that in 1975 the ratio would be 23 persons over 65 for every 100 under that age.

The survey was the first attempt on a national scale "to assess the quality of the services to old people." As was to be expected, it disclosed numerous deficiencies both as to facilities and personnel. However, in some areas there were promising experiments, such as "day hospitals," about which the report was careful to state that "it was too early to pass judgment on [their] merits . . . because few exist and these are of widely different characters." Among the conclusions were:

The appointment of a geriatric physician for the aged sick who are hospitalized is to be desired. Geriatrics, it was stated, is not a specialty demanding clinical knowledge denied to others on a hospital staff. A geriatric physician should be a good general physician with a knowledge of mental confusion states and with an appreciation of the sociologic factors influencing illness in the aged. . . .

The "key" to problems arising from an aging population lies with preventive, rehabilitative, and domiciliary services.

Home care would be impossible without the general practitioner, and his coöperation is essential.

To provide relief for relatives there should be short-stay accommodations in the hospital during the summer months for the aged.

More "gadgets" in the home make it possible for old people to retain their independence longer.

The advantage of small, single dwellings for the aged with supervisory service is obvious.

In a memorandum to regional hospitals in 1957 the Ministry of Health agreed with the "key" conclusion relating to preventive, rehabilitative, and domiciliary services, but stated that "the first aim should be to make adequate provision wherever possible for the care of old people in their homes." This was emphasized in my talks with Ministry officials when I visited England in 1962.

Despite the spectacular achievements of medicine and the advances in social sciences there is for the aged a point of no return. Much has been made of the progress in extending the life span. Unfortunately, for a large percentage this is no blessing. There are far too many old people who have deteriorated physically and mentally beyond the possibility of restoration to a near normal existence. The challenge to the medical profession and those engaged in social welfare work is not alone to lengthen life but to make it worth living.

What stimulated my interest in the program for the aging in England was what I had learned of the nursing home situation in Washington, D. C. With the exception of municipal institutions most nursing homes are privately owned and operated for profit. They are required to be licensed and to meet certain standards established by various departments, i.e., Licenses and Inspections, Health Department, Public Welfare, Police and Fire.

In a majority of privately owned homes there is no medical supervision. When a patient requires a physician one is called in by the home, the patient, or his relatives. All have registered or practical nurses in charge. They provide or supervise the essential nursing care. Since the homes are primarily havens or rest homes for the aged sick, occupational therapy or other restorative therapy is not provided.

"What of the nursing home care for the aged in England?" I inquired of Dr. Neville Goodman, Deputy Medical Chief of the Ministry of Health, when I called upon him in London last summer. Because nursing homes in England are dissimilar to those in the United States, providing hospital care for patients of all ages, it was suggested that I visit the geriatric departments of several hospitals in or near London. Having limited time at my disposal, I chose the Stoke Mandeville Hospital at Aylesbury in Buckinghamshire, about which I had heard favorable reports.

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* Special Assistant to the Executive Vice President of Medical Service of the District of Columbia; formerly Executive Director and Secretary, The Medical Society of the District of Columbia.

It was arranged that I should see Dr. L. Wollner, Director of the Geriatric Department of this hospital. Situated in the open country a short taxi ride from the railway, the Hospital consists of a large number of one-story brick buildings. Several of these have been set aside for the Geriatric Department, a short distance removed from the others. Dr. Wollner's tiny office adjoins a small reception room. I sat across the desk from him taking notes. It was apparent that he had a busy schedule, for he was prepared to brief me without interruption, which he did for an hour or so. He said the Stoke Mandeville is a regional hospital. He is not only head of its geriatric unit but of the region's social welfare services. He is the only physician in the country who holds both positions. He felt that it had worked out very well. It is particularly advantageous to the aged, he said, because of their frequent need for both health and welfare services.

The Geriatric Department at Stoke Mandeville Hospital accepts the aged who are acutely ill as well as those who have chronic diseases. Excluded are mental patients, who are sent to special institutions. Dr. Wollner reiterated what other health officials had said—the best place for old folks, if conditions permit, is in their own homes. It is in his role as social service administrator that he manages to keep many of them there.

Within 48 hours after receiving an application from an elderly person for admission to an old-age home a social welfare worker is on her way to ascertain the situation of the applicant. If he is found to be living with a married son or daughter, the relationship is thoroughly explored. If there is friction, the parent may be removed at once to the old-age home or the hospital in an effort to create a more reasonable attitude on the part of the son or daughter. Very often, Dr. Wollner said, a satisfactory arrangement can be worked out which will permit the elderly patient to return to the household under more favorable conditions.

In an effort to take the pressure off the homes where old people are a source of irritation, holiday admissions are arranged. To give the family a breather the patient may be removed from the home for 2 weeks during holiday vacations. When it is deemed advisable, families are relieved of their aged periodically. There are instances where this is for 1 month out of 3. If necessary, the parent may be hospitalized or placed in an old-age home (called a Residency Hostel in England) for some time with the understanding that if there is improvement in his condition an attempt will be made to resume the family relationship.

Of course, situations of the aged vary considerably. Some live alone under impossible conditions and must be institutionalized. Others find it possible to live alone with some outside assistance.

Day hospital care, Dr. Wollner said, has been instituted for those who are reluctant to leave home. It also helps to ease the hospital bed situation. Patients admitted for day care are usually given hot meals, physical therapy or other treatment for their condition. The goal is to make the elderly as self-sufficient as possible.

Forty per cent of the aged applying to the welfare services are suffering from physical ailments. Upon admission to the Geriatric Department they are given a thorough physical examination. A surprising 80 per cent, Dr. Wollner said, respond to treatment, and many of them are returned to their homes.

My wife and I were escorted by Dr. Wollner to one of the barracks-like brick buildings nearby in which there was a ward containing 12 to 14 beds. All patients were men with partial or complete paralysis. A few had recovered sufficiently to be up and about and were engaged in some form of occupational therapy in the center of the ward. Dr. Wollner said he favored therapy in the wards or in rooms immediately adjacent to them rather than in separate departments. In his opinion, it raised the morale of those still bedridden to observe the improvement made by other patients.

As head of the welfare services, Dr. Wollner is responsible for the Residency Hostels. The criteria for admission to the Hostels are need, suitability, and priority. When the situation is of an emergency nature, an aged person is admitted at once. There were at the time, I was told, 300 on the waiting list, 200 of whom would be admitted as soon as possible and the others when space became available. Dr. Wollner hopes that in 3 to 5 years there will be sufficient accommodations for all.

There is a means test for those applying for admission to Residency Hostels. Anyone having an annual income of over 400 English pounds, approximately $1,200.00, must pay what he can for his care. Those indigent or nearly so are required to turn over their national pension to be applied to the cost of their care. If this is not sufficient, the deficit is made up from local taxes.

As to suitability for admission to a Residency Hostel the following requirements must be met: The person must not be incontinent, must be able to walk about with little or no assistance, and must be able to feed himself.

Although Dr. Wollner's presence was urgently needed elsewhere, he agreed to answer a few more questions. I asked him what had been done along the line of disease prevention among the aging. Very little, he said. For the time being he was generally pleased with the results obtained in the application of restorative procedures.

There is, he said, a shortage of nurses willing to care for the aged. There are also insufficient hospital beds for ailing old people. Most important, there is a lack of understanding of the problems of the aged. He expressed deep gratitude for the coöperation of physicians in general practice.

My overall impression was that within the limits of the funds available the Geriatric Department at the Stoke Mandeville Hospital under Dr. Wollner's direction is doing very well in coping with the medical problems of the aged sick. It appeared the number of those being restored in health sufficiently to return to their homes is most encouraging. Relief to families in whose homes the aged had become a disturbing problem was to me most impressive. Best of all, the aged in the area who are admitted to Dr. Wollner's department need no longer contemplate the prospect hopelessly, for there is hope that they will be returned to their homes.

Some years ago my cousin John, then in his latter sixties, was admitted to a nursing home. He was aware that it was necessary, but nevertheless was much distressed. He said to his son, "This is a one-way ticket." And so it proved, for he died not long after.

Modern hospitals and nursing homes organized to provide the care needed by the aged hold greater hope for them than in the past. In the nature of things, sooner or later there will be a "one-way ticket." However, many of those formerly written off can now be restored to a reasonably happy and active existence.

Medical Programs—Department of Public Welfare

JACK KLEH, M.D.

Medical Director, Department of Public Welfare of the District of Columbia

A REVIEW OF THE MEDICAL PROGRAMS operated under the jurisdiction of the Department of Public Welfare would seem appropriate at this time. First, there is always some confusion in separating the welfare programs from those of the Department of Health, and this should be clarified. Second, the changing character of disease and the need for information and assistance in nonmedical areas make knowledge of welfare agencies and institutions helpful in the management of many patients. The increasing cost of social welfare, particularly of programs of financial aid, has drawn considerable attention in Congress and the press during recent months. The physician can be a much more effective citizen in the community if he is well informed, and particularly if his scope of knowledge extends beyond the immediate health and medical problems into social welfare and other professionally unrelated areas.

The primary mission of the Department of Public Welfare is to provide assistance for those individuals or families in the community who are unable to meet their own needs. In the past the medical aspects of these programs have been largely coincidental and there has been no physician participation in program planning. At this time the changing needs of the problems of the retarded or the emotionally disturbed child and the long-term care of the chronically ill and the aged with their high incidence of disability have placed a different type of demand on the physician practicing in the community and more especially on the Welfare Department.

The time when community responsibility can be met by building additional "beds" is at an end. The economy cannot long continue to support the growing list of dependent and delinquent children any more than it can afford to relegate all of the aged to community dependency. Means must be devised to maintain these persons in as productive a capacity as possible. There must be economy practiced in the role of these children and aged in our society as well as economy in the programs designed to help them.

Health and Welfare exist as separated departments. There is considerable overlapping, and in planning for either area there should be mutual understanding as to area of responsibility. It would seem that as a general policy those areas that are primarily social or economic in nature would be Welfare problems, just as health, disease control, and sanitation would be Health Department's domain. There are, however, certain areas of multiphasic needs that have been assigned to Welfare—the aged and the mentally retarded, delinquent and dependent children.

There seems to be an increasing need for social services in health programs and a greater demand for medical participation in the planning and implementation of welfare programs. The problems attendant to establishing and maintaining medical and related services for such diversified areas as youth, dependency and delinquency, and the aged and disability evaluation in relief recipients are unique. There is little precedent for the function of the physician and paramedical personnel in the Welfare Department.

The importance of research and education is accepted. The concept of welfare institutions carrying out medical research and education is not quite so firmly entrenched. There has been little interchange or planning between Welfare on the one hand and medical teaching institutions or Public Health services on the other. It has been necessary to point out the importance of medical services in the areas of the aged, delinquency and mental retardation and the fact that welfare programs not only should include medical research and education, but must if these problems are to be met.

The objectives of the Department of Public Welfare have been defined as follows:

1. Provide basic medical and nursing care as required.
2. Maintain close association with Health Department planning and function.
3. Institute a program of research and education, particularly in relation to presenting problems.
4. Serve as source of reference for community planning and a proving ground for community ideas.

These programs will be considered in 3 areas: the Public Assistance program which provides financial support for the aged and dependent, programs for children, and direct programs for the aged.

Public Assistance

The medical phase is an important factor in the determination of eligibility for several programs—Aid to the Blind, Aid to the Permanently and Totally Disabled, General Public Assistance and, in some cases, Aid to Dependent Children by the Public Assistance Division. Overly simplified, it is a question of determining disability. Here the participating physician must remember, however, that disability is not synonymous with disease alone and may well be contingent on age, the extent of education or technical ability, and even cultural attitudes and employment opportunities in the community. The physician must participate on a team that considers all of these facets before concluding that gainful employment is infeasible. In practice there are 2 panels. The Basic Review Panel, consisting of a physician and a medical social worker, reviews previously obtained medical and social data and may decide that the individual is eligible, ineligible, or that more data are required before a decision can be rendered. Difficult or controversial cases are referred to a Special Review Panel, consisting of a physician, who may be an internist, a physiatrist or a psychiatrist, a medical social worker, and rehabilitation and employment counselors. The applicant is not seen by the Basic Review Panel but appears in person before the Special Review Panel.

There has been an interesting by-product in the case of the Special Review Panel. In many instances not only can eligibility or ineligibility be determined, but a plan can be devised for the individual toward retraining or gainful employment through a coördinating program possible only through this type of approach. The physician participation in this disability determination process obviously is not that of the usual physician-patient relationship. The medical data are obtained largely from other sources, basically at this time from the Northwest Central Clinic through a joint cancer detection and chronic disease screening and disability evaluation program. Although this approach is much more satisfactory than that of a few years ago, when any physician or any clinic examined the applicant and a heterogeneous assortment of reports resulted, it does not approach the ideal. At the present time ways and means of developing a specialized disability determination approach are being explored, wherein the physicians participating in disability determination and planning would be the same physicians that examine the applicant.

Experience with the Special Review Panel has been educational and has pointed out too well the variety of factors, physical, emotional, social, economic and cultural, that merge to produce dependency and the fallacy in attempting to deal with any one alone.

It has also demonstrated that financial subsidy must be handled as any potent drug, since, while in most instances its use is lifesaving, it has side-effects, and these may prolong illness or even produce it. It may be habituating if not addicting.

Incorrect decisions as to eligibility for financial assistance can, of course, affect the community's pocketbook, but it may have an equally adverse effect on the individual, because, even in its absence in fact, attaching the label "disability" may eventually produce it.

Programs for Children

Medical participation in programs for children lies in 3 areas. Children's Center at Laurel, Maryland consists of the District Training School, an institution for retarded individuals with housing and infirmary facilities of 1,200 beds, and 2 schools for delinquents, Cedar Knoll with 552 and Maple Glen with 241 beds. A central medical program provides both outpatient and inpatient service for the 3 divisions. Research projects have been directed toward defining causes of mental retardation and methods of controlling emotionally disturbed children. There is also a modest teaching program which will probably expand if projected plans are accomplished.

The Receiving Home is a temporary institution of 90 beds with security features for delinquent children. The medical program is essentially one of screening and referral.

Junior Village is an open institution for dependent children with 240 beds that has been running a census well over 600 for the past several months. Although these are supposedly well children, in fact there is a consistent 20 per cent illness rate with higher percentages during outbreaks of certain infectious diseases. The children are housed in cottages according to age. Medical and nursing problems in the 6-month to 3-year-old group are so demanding that it has been taken over by the medical service and is run as a nursing care facility. An infirmary of some 60 beds is maintained at D. C. Village for ill children as a temporary expedient until projected infirmary facilities for Junior Village can be completed. A daily outpatient clinic is held to provide medical service for the older children.

The Child Welfare Division operates a multiphasic service for some 4,000 to 5,000 children, some at home, some in foster homes, and some for children in certain institutions. This agency maintains the Child Welfare Clinic, which is essentially a "well child" service in that it provides for examinations and immunizations and makes arrangements for care largely in Health Department facilities for those that become ill.

A plan for reorganization of the children's services has been proposed which would make the Child Welfare Clinic the central coördinating agency and provide continuity of care for all children coming under the Department's jurisdiction. Under this plan Child Welfare would provide baseline evaluation and initiate the child's record unless these have already been accomplished through a previous institutional admission. It would carry out initial immunizations and continue to do preadoption and other examinations where the Department is legally responsible. In addition, however, it would provide definitive outpatient service to the extent indicated by the patient load. This may include specialty clinic service in certain high density areas, for example, eye, dental, etc., but whether such a service would be warranted would be determined by the number of cases and whether or not special equipment would be needed as well as existing patient loads in Health Department clinics. The plan further suggests that local community physicians be utilized on a contract basis for medical care of children in the many foster homes spread through the adjacent counties, frequently a considerable distance from Washington.

This revision would give recognition to the growing importance of medical programs for retarded and delinquent children and is based on the policy that utilizing services generally available in the community at large is not satisfactory in terms of care provided and is poor economy. It has been demonstrated that failure to provide certain services to these children—dental care, for example—as part of the agency's and institution's program merely means that the child does not get this service.

Program for the Aging

In the development of the program for the aging at D. C. Village it became evident quite early that it would be unwise to plan to provide a bed for all those who might need such facilities. D. C. Village dedicated a 344-bed infirmary in 1954 that was to provide enough beds for the next 10 years. Within the year after this dedication there was a sizable waiting list, and it became necessary to consider D. C. Village in relationship to general community planning toward meeting the needs of the aging and more particularly the indigent or near-indigent ones. Besides the infirmary the institution contains a Resident Hall housing section of 364 beds which is being replaced at this time by 10 50-bed cottages.

D. C. Village is some 56 years old, and of necessity through the years has served as a chronic disease hospital, as custodian for the mentally retarded and emotionally disturbed, as an annex to Saint Elizabeths Hospital for quiescent psychotics, and as a haven for alcoholics. These functions were provided only as an expedient, and at no time was it felt that the program and services for these areas were adequate. The availability of other resources and the mounting pressures of the aging have made it mandatory to redefine the role of D. C. Village and restrict its program.

A primary function of D. C. Village is to provide shelter and maintenance for the needy aged, not necessarily as a terminal or permanent arrangement but as required in a progressive social program. Such service may range from a few days to many years and is determined individually by the needs of the person in the community situation. It also serves to provide facilities for "evaluation"—physical, psychologic and social, of the indigent and near-indigent aged so that better planning can be effected. The medical program provides, besides basic medical and nursing care, programs of research and education in the field of aging. By merging with other disciplines the medical program seeks to provide a plan for each admission whereby maximum "functional health" is restored or maintained.

In the near future it is hoped that D. C. Village can take on added functions. It would be desirable, for example, to process those Public Assistance recipients that have been recommended for proprietary nursing homes through D. C. Village to provide coördinated basic evaluation and to make recommendations. A good home care program could then be built upon this base.

There are many situations in which relatives are hardly able to keep the aged indigent in their homes even with financial assistance. This has become increasingly so because of multiple employment in the same family. Periodically the aged individual in this situation could be admitted to D. C. Village either for reëvaluation or just to allow the relatives a "breather." This would be good medicine, good social work, and good economics. Finally, there is a need for data on which to develop facilities and services to provide long-term care for those with chronic disease. While research at D. C. Village has been primarily geared to the disease and problems of aging, it could well serve to gather data of an administrative nature for nursing and medical programs for further progress in this field.

The Department of Public Welfare, in addition to financial assistance, provides protective services for those indigent or near-indigent who are incapable of self-management. The medical services form one facet of total multidisciplinary programs designed to meet a variety of needs. Duplication of services offered under other auspices has been avoided, and in all instances they have been established only to an extent necessary to complement existing ones for more efficient and more economic care. In principle, medical and paramedical services have been provided to match patient needs.

The absence of a definitive frame of reference for the planning and provision of medical services in long-term care programs has necessitated research directed toward administration, staffing, and equipment utilization as well as the extent to which paramedical services can be used efficiently in addition to what might be considered medical research in mental retardation and aging. These are new fields and as such require new terminology, different classifications, and an approach that varies considerably from those accepted for acute disease programs.

Letters to the Editor

Increased Fees for Private Duty Nurses

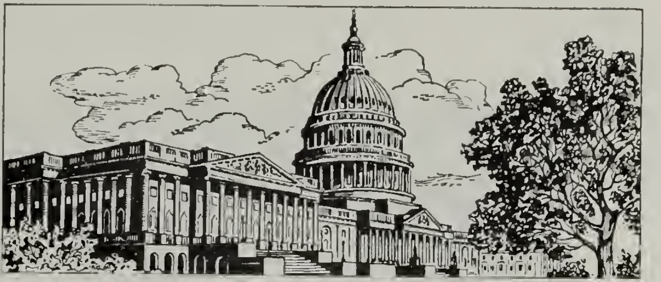
The Private Duty Nurses' Section of the Graduate Nurses' Association of the District of Columbia has voted to increase its fees for 8-hour duty to $22.00, beginning March 15, 1963.

This action of the Section has the approval of the Board of Directors of the Association as being commensurate with the private duty nurses' experience and responsibilities.

Based upon a working year of the average worker of 218 days, the annual income of the nurse engaged in private practice would be only $4,796.00. As private duty nurses are self-employed, they receive none of the usual benefits, such as sick leave, annual leave, holidays and retirement. As they have no employer to share the Social Security tax, they must pay 5.4 per cent on $4,800 instead of the usual employee tax of 3.625 per cent.

May we ask your coöperation in helping us to interpret to the public, and especially to members of your Association, the justification for the increase in fees for private duty nursing.

Sincerely,
Edith M. Beattie, R.N.
Executive Secretary, Graduate Nurses' Association



NEWS & PERSONALS

Meetings

Physicians are asked to hold Thursday, June 6, open for a **one-day meeting** at the Hotel Statler-Hilton. **"The Enlarging Role of the Private Physician in Tuberculosis Therapy"** is the subject of a Symposium to be held on that date.

Because new developments in tuberculosis are increasingly making it possible to return the management of the TB patient to the private physician, and because the Washington Metropolitan Area represents a major spawning ground for tuberculosis in this country, a group of distinguished medical organizations are sponsoring this Symposium. They are: the D. C. Chapter of the Academy of General Practice, the American College of Chest Physicians, the Medical Society of the District of Columbia, the D. C. Tuberculosis Association, the American Thoracic Society, and the D. C. Thoracic Society.

With the intent of bringing physicians up to date on advances in tuberculosis prophylaxis, therapy, and after-care, the following papers will be presented:

"The Private Physician's Role in TB Control," Dr. J. Arthur Myers, University Hospital, University of Minnesota

"Tuberculin Testing in Private Practice," Dr. William Russell, Director, Jefferson County Health Department, Denver, Colorado

"Follow-up of Positive Reactors," Dr. C. E. Brasher, Medical Director, Missouri State Sanatorium

"Drug Therapy for TB Patients Outside the Hospital," Dr. Aaron Chaves, Bureau of Tuberculosis, Department of Health, New York City

"Special Problems of TB Patients with Which the Private Physician Can Be Most Helpful," Dr. Carl Muschenheim, Cornell University Medical College.

Dr. Sidney H. Dressler, Special Assistant Chief, TB Program, Public Health Service, will be the speaker at a complimentary luncheon. His subject will be "Tuberculosis Today and Tomorrow."

Members of the District Medical Society will receive a formal invitation to this event. This program is acceptable for Category I credit by the American Academy of General Practice.

The American Medical Association will hold its **112th Annual Meeting** in Atlantic City, June 16–20. An attendance of 15,000 physicians is anticipated. A new type of air-land shuttle service has been arranged by the Convention Bureau between Philadelphia and Atlantic City.

A new feature of the program will be a session on "Physician and Clergy Meet in Patient Care," the first of its kind ever held on a national level. The program has been developed by the AMA's newly formed Committee on Medicine and Religion. Dr. Milford O. Rouse, of Dallas, is Chairman. The session will be held on the opening day, Sunday, June 16, at 8 p.m. in the City Auditorium. Featured speakers will be the Most Rev. Fulton J. Sheen, of New York, and Dr. Edward R. Rynearson, of the Mayo Clinic, Rochester, Minn.

The Multiple Discipline Research Forum will be presented again, at which more than 200 short papers will be read, reporting on original investigation of fundamental problems in medicine.

The Traymore Hotel and the New Colony Motel will be joint headquarters for the meeting. The sessions of the House of Delegates will be held at the Traymore. Headquarters of the Woman's Auxiliary will be the Chalfonte-Haddon Hall.

The meetings of the House of Delegates will be attended by the D. C. Medical Society's delegates, Dr. Raymond T. Holden and Dr. C. Willard Camalier, Jr., and by the Secretary of the Society, Mr. George W. Cooley. Many Washington physicians are expected to attend the scientific sessions; they are also urged to attend the meetings of the House of Delegates.

"MY LEICA WAS KEPT IN FOCUS AND BUSY," writes Dr. Leslie H. French, who submitted these prints from a group he took in New York the third week of March while attending a Graduate Course in Recent Advances in Cardiovascular Diseases, sponsored by the American College of Physicians at Mount Sinai Hospital. "Not to be forgotten soon," he commented, "was Dr. Proctor Harvey's discourse on Heart Sounds delivered with the currently popular Harvard accent." Dr. Harvey in action is shown above (right). It is evident that instructors too (left) were absorbed in what they heard and saw. In the foreground is the eminent cardiologist, Dr. Arthur M. Master, of New York, and beside him is Dr. Hubert V. Pipberger, Assistant Professor of Medicine at Georgetown University.

"Neurological Diseases in Infancy and Childhood" will be the subject of the **Annual Postgraduate Course of Children's Hospital of D. C.,** May 22–24. The topics to be presented include Interpretation of Physical Signs, Metabolic and Degenerative Diseases, Myopathies, Diseases of the Spinal Cord, Cerebellum and Basal Ganglia, Seizures, Head Injuries, Brain Tumors, Congenital Anomalies, and Cerebral Vascular Disease in Childhood.

The staff of Children's Hospital and the Departments of Neurology and Neurosurgery of George Washington and Georgetown University Schools of Medicine will provide speakers. Guest speakers will include Dr. Maitland Baldwin and Dr. W. King Engel, of the National Institutes of Health; Dr. Neil S. Gordon, Manchester, England; Dr. Charles Kennedy, Philadelphia; Dr. John H. Menkes, Baltimore; and Dr. E. Pierson Richardson, Jr., Boston.

The Wall Memorial Lecture will be delivered on Friday afternoon, March 24, by Dr. E. Arnold Carmichael, of the National Hospital for Nervous Diseases, London.

The course will be presented with the aid of a grant from the Public Health Service, and no tuition fee will be charged. However, the capacity of the auditorium is limited and advance registration is essential. Members who are interested in this program should reserve a seat by calling Dr. Richmond S. Paine at Children's Hospital, Dupont 7-4220.

The Second Annual Seminar on Retarded Children, under the sponsorship of Georgetown University and its Retarded Children's Clinic, will be held, May 24 and 25. Meeting-place will be the Hall of Nations, School of Foreign Service, 36th and N Streets, N.W. The program will begin at 9 a.m. both days, closing at 4 p.m. on Friday and at 1 p.m. on Saturday.

Faculty members and many guest speakers will participate in the program. Friday morning will be devoted to a panel on "The Hyperactive Retarded Child in the Classroom." Speakers will include Dr. William Cruickshank, of Syracuse University, and Dr. Michael J. Grana, psychiatrist at Hillcrest Children's Center. In the afternoon there will be a panel on "The Retarded Child in the Home," with Dr. Frederic G. Burke, formerly head of the Department of Pediatrics at Georgetown, as moderator. Dr. Reginald S. Lourie, Director of the Department of Psychiatry at Children's Hospital, and other prominent speakers will be panelists.

Saturday morning will be devoted to papers on a variety of subjects. Dr. Richard L. Masland, Director of the National Institute of Neurological Diseases and Blindness, NIH, will speak on "The Investigational Outlook of the Future

Regarding Mentally Handicapped Children." Dr. William G. Hardy, of Johns Hopkins University, will discuss "Communication Disorders in Handicapped Children," and Dr. Malcolm M. Martin, of Georgetown University, "Genetics of Intelligence."

Dr. Frank Mate, Jr., Director of the Retarded Children's Clinic, advises that all interested physicians are welcome to attend. However, attendance will have to be limited to a seating capacity of 500, and reservations should be made in advance with Mrs. Ethel Schreve, Federal 3-2000, extension 643.

The Second International Congress on Medical Librarianship and the 62nd Annual Meeting of the Medical Library Association will convene in Washington, D. C. at the Shoreham Hotel, June 16–22. Dr. Luther L. Terry, Surgeon General of the Public Health Service and Honorary President of the Congress, will give the opening address at 8 p.m. on June 16.

The program is of interest primarily to medical librarians, but any physicians who are interested in this phase of medical communication are invited to attend. The final session on Saturday, June 22, will be of interest to medical historians. Three papers to be presented at that time are:

"A Historical Medical Collection, and Some of the Problems It Presents," William Dosite Postell

"Source Materials and the Library: the Dispersion of the Beaumont Papers," Irwin H. Pizer

"Subject Headings in the Wellcome Historical Medical Library," E. Gaskell

A copy of the preliminary program can be obtained from Miss Jane M. Fulcher, Medical Librarian at the Washington Hospital Center, Washington 10, D. C.

Boards & Committees

The Executive Board of the Medical Society of the District of Columbia met in the Society's building, March 25. Dr. W. LeRoy Dunn, Chairman, presided. Present were Drs. Victor R. Alfaro, Karl C. Corley, J. Spencer Dryden, Duane C. Richtmeyer, and Mr. George W. Cooley, Secretary.

Items of Business

1. The minutes of the February 25 meeting were approved with minor changes.

2. Dr. Alfaro gave a progress report on the work of the House Committee in developing various alternatives in reference to the Medical Society's building.

3. Dr. Donald Stubbs appeared before the Board to discuss a resolution to be presented on behalf of Medical Service of D. C. to the Conference of Blue Shield Plans, March 31, in Chicago.

4. The Secretary reported on the following meetings held since the last Board meeting·

February	26	Liaison Committee with the Clergy
	26	Committee on Blood
March	1	Review Board for Prepaid Medical Care Benefits
	1	Committee on Cancer Control
	4	Committee on Mental Health
	5	Comitee on Public Health
	6	Committee on Rehabilitation
	13	House Committee
	19	Grievance Committee
	20	Board of Credentials
	22	Committee on Public Information and Education

5. Dr. Calvin T. Klopp, Chairman of the Cancer Control Committee, reported on the following items:

(a) A proposed Cancer Advisory Board whose function would be to administer and enforce certain provisions of the D. C. Code relating to the registration of individuals and associations engaged in the diagnosis, treatment, or cure of cancer; to advertising of cancer treatment; to information on the content and nature of drugs, etc., used in cancer treatment and to public information on cancer. It was voted that the Cancer Control Committee be directed to investigate the establishment of a District Cancer Board as proposed and report back to the Executive Board.

(b) A Cancer Coördinating Group or clearing house to serve as an advisory committee to various organizations concerned with cancer in the District. It was voted that the Committee be authorized to create a subcommittee to prepare an organizational plan for such a central information or coördinating agency and report back to the Board.

(c) The present method of identifying doctors in the "Cancer Answers" service of the local Cancer Society. In reference to this, the Cancer Control Committee voted to go on record as opposing the identification of physicians in this program and to recommend that the Executive Board seek to have the Cancer Society cease this practice. A letter signed by Harold W. Krogh, D.D.S., President of the local Cancer Society, was distributed and read. It was generally agreed that identification of the physician by name was not essential to the success of the program and it was voted that it be recommended to the D. C. Division of the American Cancer Society that the name of the individual doctor be omitted, for a period of 3 months, from these messages and that the results be tabulated over that 3-month period of time; that during this period, equal publicity be given to the program; and at the end of this period, it be determined whether or not deletion of the name of the doctor has had any effect upon public acceptance of the program. It was suggested that instead of using his name, the doctor state, "This is a member of the Medical Society of the District of Columbia" or "This is a doctor in private practice from the Medical Society of the District of Columbia," and then proceed with the message.

6. The Executive Board approved a new statement on Venereal Disease Regulations of the District of Columbia prepared by Dr. William G. Battaile, Chairman of the Section on Pathology and Laboratory Medicine, and Dr. Harold M. Hobart, Chairman of the Committee on Public Health.

7. Approval was given to the appointment of Lt. Colonel Edwin L. Overholt, MC, USA, to succeed Colonel Conn L. Milburn, MC, USA, Consulting Editor to the MEDICAL ANNALS. The appointment was submitted to the Board by the Editor of the ANNALS, Dr. Wallace M. Yater.

Colonel Overholt is Chief of the General Medicine Service, and Assistant Chief of the Department of Medicine, Walter Reed General Hospital, posts he has held since September, 1959. He is a Fellow of the American College of Physicians and a diplomate of the American Board of Internal Medicine.

8. A letter from Edith M. Beattie, R.N., Executive Secretary of the Graduate Nurses' Association, in reference to fees of private duty nurses was discussed but no action taken. (See Letters to the Editor, page 198.)

9. On recommendation of the Program Committee for the ANNUAL SCIENTIFIC ASSEMBLY, it was voted to approve paying honoraria to guest speakers other than members of the Society, representatives of Federal agencies, including the Armed Forces, and physicians from the immediate vicinity, recognizing that each case should be considered individually.

10. It was voted to endorse a request of the Cancer Morbidity Review Committee for continuation of its study in a new site and to confer with Dr. Stafford W. Hawken and Dr. Klopp concerning any changes in Committee personnel if the study of a new site is agreed upon.

11. The proposed changes by Blue Shield in reference to income levels, extension of benefits, and increases in fees were reviewed with no action taken.

12. The following were elected to membership in the Society for a probational one-year period:

Active Members

Donald A. Kellogg, 2121 Pennsylvania Avenue, N.W.
Walter Patterson, 2000 Massachusetts Avenue, N.W.
Raphael I. Soll, 1801 Eye Street, N.W.
Sidney Jaffee, 915 19th Street, N.W.

Associate Members

Bahram Bahrami, 3003 Naylor Road, S.E.
Robert J. Benford, 1411 K Street, N.W.
Don Davis Flickinger, 1901 Pennsylvania Avenue, N.W.

13. The Secretary reported on:
   (a) The Lederle Program on Tuberculosis, scheduled for June 6 at the Statler-Hilton Hotel.
   (b) The closed-circuit TV Program, "Colleagues in Closeup," scheduled for April 24 in the Society's building.
   (c) The activities of Dr. John W. Latimer, Jr., Chairman of the Committee on Emergency Medical Service, in reference to the Health Department's program on external cardiac massage.

14. It was voted to approve a donation of $50 for membership on the Committee for Health and Research of the National Society for Medical Research.

General News

The three medical schools in the District of Columbia received contributions totaling $42,497.22 from the **American Medical Association Education and Research Foundation,** March 29, in a brief ceremony in the Medical Society's building. Dr. Karl C. Corley, President of the D. C. Medical Society, on behalf of AMA-

ERF, presented checks to: Dr. Walter C. Hess, Acting Dean of Georgetown University School of Medicine, $22,073.58; Dr. John Parks, Dean of George Washington University School of Medicine, $13,117.32; and Dr. Robert S. Jason, Dean of Howard University College of Medicine, $7,306.32.

These sums are given to the medical schools to use for whatever purpose they wish. Through its Funds for Medical Schools program, the AMA has distributed more than $13 million since 1951. A record $1,461,810.92 was contributed in 1962 to AMA-ERF for medical schools by physicians and their families throughout the country.

A contributing physician may designate a specific school to receive his gift, or, if he does not specify, his contribution is apportioned equally among all U.S. medical schools.

The D. C. Department of Public Health has a number of opportunities in its Mental Health Bureau for full- or part-time **assistance from qualified psychiatrists** in the Washington Metropolitan Area. Vacancies exist in the Alcoholic Rehabilitation Division, Emergency Home Consultation Panel, and the Psychiatric Follow-up Program. Those interested should contact Dr. Sanford Billet, Chief of the Bureau of Mental Health, 300 Indiana Avenue, N.W., Washington 1, D. C.

The Clinical Center of the National Institutes of Health announces a new revision of **"Current Clinical Studies and Patient Referral Procedures."** The publication describes briefly the diagnostic requirements, purposes and methods of those studies expected to be most active during the coming year.

Consideration for admission to the Clinical Center is restricted to individuals referred by their own physicians and, on the basis of a summary provided by referral, judged by the appropriate NIH investigators to have a particular kind and stage of illness or other condition required in one or more clinical studies. Upon discharge a full report of Clinical Center findings on his patient is furnished to the referring physician.

Physicians who wish to receive a copy of the publication should write to Dr. Jack Masur, Director of the Clinical Center, NIH, Bethesda 14, Maryland.

Dr. Edward C. Kirby has been appointed **Chief of the Northeast Mental Health Clinic** of the District Bureau of Mental Health. Dr. Kirby, a graduate of Howard University College of Medicine (1956), interned at St. Elizabeths Hospital for a year and followed this training with a 3-year residency in psychiatry at the same institution. He also served for 2 years as Medical Officer and Supervisory Medical Officer at St. Elizabeths. He is on the staff of Howard University as Clinical Instructor in Psychiatry.

At the Annual Business Meeting of the **American College of Physicians** in Denver, April 4, Dr. Wesley W. Spink, of Minneapolis, assumed the presidency of the College. At the same time Dr. Thomas M. Durant, of Philadelphia, was chosen President-elect, to take office in 1964.

Dr. Durant is Professor and Chairman of the Department of Medicine at Temple University. He is Associate Editor of the *American Journal of Medical Sciences.* Since 1958 he has served as Treasurer of the College, which represents more than 11,500 internists and specialists in related fields.

Dr. Wallace M. Yater, Secretary-General of the College, attended the meetings in Denver.

The Thirty-ninth Kober Lecturer, Major General M. Samuel White, MC, USAF, was selected for the honor by the Executive Council of the Association of Military Surgeons. The Lecture was given in the auditorium of the Gorman Diagnostic Building, Georgetown University Hospital, on March 28. His topic was "Aerospace Medicine in Clinical Practice."

General White received his degree in medicine from New York University School of Medicine in 1931. Since graduating from the Medical Field Service School in 1933, his career has been in the fields of aviation medicine and aerospace medicine. He was the first Command Surgeon of the United States Air Forces in Europe, from 1948 to 1958. He was a founding member in the establishment of aviation medicine as a specialty under the American Board of Preventive Medicine. As Surgeon of Air Training Command he supervised the establishment of the Aerospace Medical Center at Brooks Air Force Base, Texas, in 1959. He was President of the Aerospace Medical Association, 1958–1959, and is presently Vice President of the Association of Military Surgeons.

The Public Health Service's Neurological and Sensory Disease Service Program has awarded 16 grants totaling $593,744 to support community services and professional training projects to improve the quality and increase the availability of care for persons with neurological and sensory disorders throughout the United States. The District of Columbia received a sizable portion of the total amount.

The largest of the grants, $127,960, was made to Georgetown University School of Medicine for a community service project to develop methodology and expand services for early detection of children with neurological and sensory impairments, including mental retardation. Dr. Philip L. Calcagno, Professor and Chairman of the Department of Pediatrics at Georgetown University, will direct this project.

The Washington Hospital Center was granted $29,965 for expansion of the Center's Speech and Hearing Clinic under the direction of Mr. David M. Resnick, Director of the Clinic.

The Children's Hospital of the District of Columbia was given $3,672 to conduct a 3-day postgraduate course in neurological diseases in infants and children. Dr. Richmond S. Paine, neurologist of the Hospital, is in charge of this course, which is announced in more detail under "Meetings" in this issue.

The Washington Psychiatric Society held its Annual Meeting with election of officers in the Medical Society's auditorium, March 22. This meeting was also designated Past Presidents' Night. Present for the occasion was Dr. C. H. Hardin Branch, President of the American Psychiatric Association, who is Professor and Head of the Department of Psychiatry at the University of Utah School of Medicine. He spoke on "Training for Community Psychiatry."

The officers elected were:

Dr. Leon Yochelson, *President-elect*; Dr. David W. Harris, *Secretary*; Dr. Paul Chodoff, *Treasurer*; and Drs. Christopher Bever and William C. Jenkins, Jr., *Councillors*.

Dr. Morris Kleinerman is the new President for 1963–64. He and the new electees will assume office at the May 10 meeting.

The International Medical Club of Washington elected officers, March 9. They are·

Dr. Harry Lee Claud, *President*; Dr. Donald Leeper, *First Vice President*; Dr. W. E. Baensch, *Second Vice President*; and Dr. V. T. DeVault, *Third Vice President*.

Dr. Robert V. Choisser was reëlected Secretary.

Dr. Lemuel C. McGee, of Wilmington, Delaware, has been elected Chairman of the Council on Occupational Health of the American Medical Association, succeeding Dr. James H. Sterner, of Rochester, N. Y. Dr. McGee has been a member of the Council since 1954. He is also Secretary of the AMA Section on Preventive Medicine.

May is Better Hearing Month. This year marks the 35th annual educational campaign, under the sponsorship of the American Hearing Society, to focus attention on America's hearing problem, directly affecting around 15 million persons with impaired hearing, including some 3 million children. The theme of Better Hearing Month is "You'd Best Invest in a Hearing Test."

National Hospital Week will be observed, May 12–18. The theme this year is "Today's Hospital—Career Center for America's Youth." As part of this observation the American Hospital Association has published a new book, "Careers in Hospitals." Copies may be obtained at $1.25 each from the American Hospital Association, 840 North Lake Shore Drive, Chicago 11, Illinois.

Personals

Dr. Donald Stubbs was appointed to the Executive Committee of the National Association of Blue Shield Plans at its annual meeting in Chicago, April 2. Dr. Stubbs was President of Medical Service of the District of Columbia from 1952 to 1959. In 1958 he was elected Chairman of the Board of Directors of the National Association, which post he held until 1961.

Dr. John Parks, Dean of George Washington University School of Medicine, was elected to the 7-member Executive Committee of the National Board of Medical Examiners at its meeting in Philadelphia, March 16.

George Washington University announces that an annual **Charles Stanley White Lecture in Physiology** has been established at that University through an endowment by Dr. Charles Stanley White, Professor Emeritus of Surgery and Honorary Trustee. The announcement states that Dr. White has asked that the lectureship be administered with special reference when possible to surgical physiology and that the Lecture be continued through his lifetime and that of his son, Dr. Charles Stanley White, Jr. After this the fund may be used in any way the Administration may designate for the School of Medicine.

Dr. John C. Rose will be the **new Dean of Georgetown University School of Medicine** on July 1. This announcement was made, March 30, by the Very Reverend Edward B. Bunn, S.J., President of Georgetown. Dr. Rose succeeds Dr. Hugh H. Hussey, who is now associated with the American Medical Association in Chicago.

Dr. Rose, who was born in New York City in 1924, served as navigator of a B-24 bomber in World War II. He is a graduate of Fordham University and of Georgetown University, receiving his medical degree *magna cum laude* from the latter in 1950. Joining the Georgetown faculty in 1954 as Instructor in Medicine, he progressed to Associate Professor of Physiology and Biophysics, becoming Chairman of that Department in 1959, and Professor in 1961.

JOHN C. ROSE, M.D.

A diplomate of the American Board of Internal Medicine, Dr. Rose is a Fellow of the American College of Physicians and a member of many other medical organizations. He is Medical Editor of GP, which position his predecessor, Dr. Hussey, also held for many years. He is the author of 60 scientific papers, largely in the field of physiology and research on diseases of the circulation.

He and his wife, Mrs. Dorothy Donnelly Rose, and their 5 children reside near Olney, Md.

Dr. David A. Lanham has been appointed Chief of the Legal Psychiatric Services Division of the D. C. Bureau of Mental Health. After receiving his medical degree from St. Louis University in 1955, Dr. Lanham interned at St. Elizabeths Hospital, and followed this with a 3-year residency in psychiatry at St. Elizabeths.

Dr. Karl C. Corley, President of the Medical Society of the District of Columbia, was one of several to receive awards for distinguished service from the Georgetown Club of Washington at its 13th Annual Awards Luncheon at the National Press Club, March 15. Mr. George H. Buechert, Jr., President of the Club, made the presentations. Other recipients were Dr. Albert K. Leon, Jr., President of the District Dental Society; Senator Alan Bible, of Nevada; Mr. James J. Bierbower, Past President of the Georgetown Club; Commissioner Paul J. Tierney, of the Interstate Commerce Commission; and Judge Charles Fahy, of the Court of Appeals.

Dr. William B. Walsh, President of the People-to-People Health Foundation and founder of Project HOPE, was honored, March 21, by the American Association of Industrial Nurses at its annual banquet, held at the Sheraton-Park Hotel. Dr. Walsh was presented a plaque citing him as "an outstanding humanitarian and contributor to world peace."

The hospital ship *Hope* returned to New York City in March from Trujillo, Peru, where it was anchored for 10 months while the medical staff performed more than 2,000 major operations and treated many thousands of diseased persons. The *Hope* is now being refitted to take her to Ecuador in the fall. Dr. Walsh emphasizes that *Hope* only goes to countries where it is invited, and its primary objective is to train native doctors and nurses in the latest medical techniques and American hospital methods. However, Dr. Walsh states that a considerable by-product of its mission is the good will it engenders wherever it has carried out its assigned tasks.

Dr. Jack Kleh has been elected to the Board of Directors of the Washington Heart Association. He is Chairman of the Association's Committee on Community Services.

Dr. Ralph G. Beachley was presented with an inscribed plaque, March 14, by the Metropolitan Health Officers' Association, in recognition of his 25 years' service as Director of Public Health of

Arlington County, Va. Dr. Beachley, an alumnus of George Washington University School of Medicine, is an Associate member of the D. C. Medical Society.

The American College of Obstetricians and Gynecologists recently inducted 587 new Fellows into the College. Included from the District of Columbia were **Drs. Margaret W. Bridwell, Charles M. Cabaniss, William H. Cooper, Elizabeth A. Crisp, Clarence K. Fraser, and Thomas A. Wilson.**

Dr. Paul B. Garcia, of Providence Hospital, was recently certified by the American Board of Pathology.

Dr. Frank S. Pellegrini has been elected Vice President of the Southern Maryland Bank and Trust Company in Hillcrest Heights, Maryland.

Obituaries

Edwin Bernhard Behrend, M.D.

(1871–1963)

Dr. Edwin B. Behrend, who pioneered in new pathological techniques throughout a long medical career in Washington, died, February 26, 1963, at the Washington Hospital Center. He was 91 years old.

Dr. Behrend was a Washingtonian, born September 2, 1871. Until shortly before his death he still owned his birthplace, 709 H Street, N.W., where he was born to Dr. Adajah and Mathilde Behrend. His father became a member of the Medical Association of the District of Columbia in 1866 and was one of the first members of the Medical Society of the District of Columbia; his seniority number was 8. He died in 1932.

Young Dr. Behrend attended the public schools in Washington and graduated from the Emerson Institute in 1888. He received his Bachelor of Arts degree from John Hopkins University in 1892 and his medical degree from Georgetown University School of Medicine in 1894. He interned the following year at Garfield Memorial Hospital.

Becoming interested in pathology, he went abroad for study in Berlin, Vienna, and Prague. Among his professors was Dr. Rudolf Virchow. He returned to Washington to enter private practice with his father, who had been a physician since shortly after the Civil War.

In 1898 Dr. Behrend founded the clinical laboratory at Georgetown University Hospital. He taught at Georgetown for 34 years, as Professor of Pathology and Bacteriology from 1901 to 1916 and as Associate Professor of Medicine from 1916 to 1935. He retired from practice in 1954.

He had been a Life member of the Medical Society of the District of Columbia since 1938. He was also a member of the American Medical Association and the Washington Academy of Sciences.

EDWIN B. BEHREND, M.D.

Surviving him are his wife, Mrs. Frances Sanders Behrend, of the Calvert-Woodley Apartments; 2 daughters, Mrs. Joseph Paull, of Washington, and Miss Louise M. Behrend, of New York City; and 2 sisters, Mrs. Andrew Stewart and Miss Esther M. Behrend, of Washington.

J. Lester Brooks, M.D.

(1884–1963)

Dr. J. Lester Brooks, formerly Medical Director of the Equitable Life Insurance Company of Washington, died, January 31, 1963, at George Washington University Hospital.

Dr. Brooks was born in Evans City, Pa., July 23, 1884, the son of a physician, Dr. Floyd Vernon Brooks, and Ada Ash Brooks. He was a grandson of James T. Brooks, an early Chief of the U. S. Secret Service.

Dr. Brooks attended the public schools of the District of Columbia and received his medical degree from George Washington University School of Medicine in 1909. Following graduation he interned for a year at Garfield Memorial Hospital.

Until he retired in 1944, because of disability, he was Medical Director of the Equitable Life Insurance Company of Washington, and had served several other firms as chief examiner.

Dr. Brooks served on the District Draft Board in World War I. He later served as a Captain in the Army Medical Corps Reserve.

He was elected to Active membership in the Medical Society of the District of Columbia in 1911 and became a Life member on January 1, 1953. He was a member of the American Medical Association, the Association of Life Insurance Medical Directors of America, and the George Washington University Medical Society. He had served his medical fraternity, Alpha Kappa Kappa, as Deputy Grand President for many years. He was also a 32nd degree Mason, a life member of Almas Temple, and a member of the Chevy Chase Baptist Church.

His wife, Mrs. Olivia Barber Brooks, of the home address, 2816 McKinley Place, N.W., survives him, together with a son, J. Lester Brooks, Jr., of Newark, Delaware.

William Carey Meloy, M.D. M.Sc., F.A.C.S., F.I.C.S.

(1903–1963)

Dr. William C. Meloy, well known plastic surgeon of Washington, died, March 15, 1963, at his home, 2440 Foxhall Road, N.W.

Dr. Meloy was born, October 12, 1903, in Seattle, Washington, to Dr. and Mrs. Hugh B. Meloy. His parents, who survive him, moved to Washington when Dr. Meloy was a young boy. He attended public schools in Washington and studied at Maryland University for 2 years. After graduating from George Washington University School of Medicine in 1928, he interned at Mt. Alto Veterans Hospital for a year, and spent a year each in residency training at Whipple Hospital, Prescott, Arizona, and Blodgett Memorial Hospital, Grand Rapids, Michigan. He followed this with postgraduate study at the University of Pennsylvania Graduate School of Medicine, where he received a Master of Science degree in medicine in 1932.

Entering private practice in Washington in 1932, Dr. Meloy maintained offices during his entire career at 2019 R Street, N.W. He was head of plastic surgery at the Washington Hospital Center and at George Washington University Hospital and consultant in plastic surgery to Walter Reed Army Hospital, Mt. Alto Veterans Hospital, Casualty Hospital, Arlington Hospital, and to the Bath Memorial Hospital in Bath, Maine.

During World War II he was on active duty as Lieutenant Commander, USN, in Marine Corps hospitals in the South Pacific. He participated in the Guadalcanal, Russel Island, Bougainville, Green Island and the Saipan campaigns, and was decorated for gallantry under fire during the Bougainville invasion.

Dr. Meloy had a long teaching association with George Washington University. He was Instructor in Plastic Surgery from 1932 to 1942 and Associate in Surgery from 1945 until his death. He had written many papers for publication in the field of reconstructive surgery.

He was elected to Associate membership in the Medical Society of the District of Columbia in 1931 and to Active membership in 1933. He was a member of the American Medical Association, a Fellow of both the American College of Surgeons and the International College of Surgeons, a member of the American Association of Plastic Surgeons, and its Secretary-Treasurer from 1955 to 1957, the American Society of Plastic and Reconstructive Surgery, the American Society of Cleft Palate Rehabilitation, the Southern Medical Association, the Military Surgeons of the United States, the Washington Academy of Surgery, and the Hippocrates-Galen Society.

He was also a member of the Chevy Chase Club, the Metropolitan Club, and the Portland (Maine) Yacht Club.

Besides his parents he leaves his wife, Mrs. Adrienne Mann Meloy, of the home address; a daughter, Mrs. Roger Martin, of Lyons, N. Y.; and a stepson, Captain Michael M. Duffy, who is serving in the Army Medical Corps.

Edward Morse Pickford, A.B., M.D., M.S.

(1900–1963)

Dr. Edward M. Pickford, Director of the Alcoholic Division of Prince Georges County Health Department, died, March 25, 1963, at the Washington Hospital Center.

Dr. Pickford was the son of the late Dr. Edward F. Pickford, a Washington physician and a Life member of the D. C. Medical Society, and Caroline Horstmann Pickford. He was born in Washington, D. C., July 30, 1900, where he received his early education. He graduated from Johns Hopkins University in 1921 and from Johns Hopkins School of Medicine in 1925. He interned at Emergency Hospital in Washington and took resident training at Barnes Hospital, St. Louis, in surgery and gynecology. He received the degree, Master of Science in Surgery, from Washington University, St. Louis, in 1927.

Dr. Pickford was engaged in general practice and surgery in Washington from 1929 to 1948. From 1937 to 1940 he was Assistant in Gynecology at Providence Hospital, and from 1934 to 1944, Instructor in Gynecology at Sibley Hospital. In 1948 he moved to Foxboro, Mass., where he trained in psychiatry at the Foxboro State Hospital. Returning to Washington in 1951, he became Medical Director of the Alcoholic Rehabilitation Division of the D. C. Health Department.

Dr. Pickford moved from Washington in 1954 to Providence, R. I., where he spent 4 years as staff physician of the Veterans Administration Regional Office. He again returned to Washington to resume private practice, and was appointed Director of the Alcoholic Division of the Prince Georges County Health Department, a position he held until he was forced to resign, because of ill health, a few weeks before his death.

Dr. Pickford was elected an Active member of the Medical Society of the District of Columbia in 1929, and transferred to Associate membership in 1948. He was a member of the American Medical Association, the Washington Medical and Surgical Society, and the Johns Hopkins Medical and Surgical Society.

He leaves his wife, Mrs. Jean Pickford, and 3 sons, David, Charles, and Douglas, all of the home address, 8905 First Avenue, Silver Spring, Md.

Louis Schwartz, A.B., M.D.

(1883–1963)

Dr. Louis Schwartz, retired medical director of the Public Health Service, died, February 25, 1963, at Walter Reed General Hospital. He lived at 4501 Connecticut Avenue, N.W.

Dr. Schwartz was born in New York City, July 4, 1883, to Jacob and Lena Jonap Schwartz. He graduated from Central High School of Philadelphia, and from Jefferson Medical College in 1905, and affiliated the following year with the Public Health Service. He subsequently served on the Coast Guard Cutter *Tahoma* and in PHS hospitals in Seattle and San Francisco, and in foreign quarantine work in Philadelphia and in the Philippines.

Dr. Schwartz was a nationally known dermatologist. In the mid-1920's he began his research into industrial skin diseases. In March, 1937 he took charge of the Office of Dermatoses Investigations at the National Institutes of Health. There he devised new methods for treating skin diseases and worked out preventive techniques. As a consultant in dermatology for state boards of health, he helped to foster the use of patch tests for diagnosis of skin ailments. After he retired from the Public Health Service in 1947 he opened offices for private practice in dermatology at 915 19th Street, N.W.

Dr. Schwartz was a diplomate of the American Board of Dermatology and Syphilology and of the American Board of Preventive Medicine and Public Health. He was a Fellow of the Industrial Medical Association, the American Academy of Occupational Medicine, the American Academy of Dermatology and Syphilology, the American Public Health Association, International Association of Allergists, and the Society for Investigative Dermatology. He became an Active member of the D. C. Medical Society in 1952. He also was a member of the American Medical Association, the Association of Military Surgeons of the United States, the Washington Dermatological Society, and many other scientific organizations.

He was senior co-author of 2 books, "Occupational Diseases of the Skin" and "Cosmetics and Dermatitis." He had written over 170 articles on occupational and related dermatoses. He was Assistant Editor of the *Quarterly Review of Allergy and Applied Immunology.*

He is survived by his wife, Mrs. Marguerite O. Schwartz, and a son, Anthony Schwartz. He also leaves a brother, Joseph Schwartz, of Philadelphia.

Alger Burr Doland, A.B., M.D.

(1921–1963)

Dr. Alger B. Doland, one of Washington's younger physicians, died suddenly in his offices at 2700 Q Street, N.W., January 23, 1963. He had also maintained offices in Clinton and Leonardtown, Md.

Dr. Doland was born in Rockaway, New Jersey, February 1, 1921. His parents were Edward and

Hattie Doland. After attending public schools in Rockaway, he attended Lafayette College for 3 years, but completed his undergraduate studies at George Washington University School of Medicine. He continued his medical studies at George Washington, graduating in 1945. After a year's internship at St. Elizabeths Hospital, he served a 2-year residency in the specialty, diseases of the eye, ear, nose and throat, at Veterans Administration Hospital.

He was on the attending staffs of Children's, Sibley, George Washington University, and Casualty Hospitals and the Washington Hospital Center.

During World War II he was commissioned Captain in the Medical Corps of the Army of the United States, and served for 2 years.

Dr. Doland was a noted yachtsman in the Chesapeake Bay area. Active for many years in boating, he was elected President for 1963 of the Chesapeake Bay Yacht Racing Association. He was Commodore of the West River Sailing Club and a member of the Annapolis Yacht Club and the Sailing Club of the Chesapeake. In 1953 he won the Virginia Cruising Cup with his sloop, *Sprite*, in a 123-mile race from Annapolis, Md. to Hampton, Va.

Dr. Doland had been an Active member of the Medical Society of the District of Columbia since 1947. He was a member of the American Medical Association, the Southern Medical Association, the George Washington University Medical Society, and the A.F.A. King Obstetrical Society. He also belonged to Phi Kappa Psi social fraternity and to Briggs Baptist Church at Westmoreland Hill.

Surviving him are his wife, Mrs. Helen-Marie Byars Doland and 2 sons, Alger B. Doland, Jr., who had won several boat races with his father, and Charles Doland, all of the home address, 4838 Tilden Street, N.W.

Sidney William Lowry B.S., M.D.

(1914–1963)

Dr. Sidney W. Lowry, an Associate member of the D. C. Medical Society, died as a result of an airplane crash, March 2, 1963, in an area near Greenville, S. C. He was the pilot and owner of the plane.

Dr. Lowry was born in Simsboro, Louisiana, September 26, 1914, to Burlie W. and Anna Elstrom Lowry. He attended the public schools of Virginia. He graduated from Madison College in Tennessee in 1939 and received his medical degree from the College of Medical Evangelists in Los Angeles in 1944. He came to Washington to intern at the Washington Sanitarium and Hospital in Takoma Park, Md.

Dr. Lowry was owner of the District Heights Medical Center. A general practitioner, he had staff privileges at Sibley, Providence, Prince Georges, and Hadley Memorial Hospitals. During World War II he was commissioned Captain in the U. S. Army Medical Corps and served for 2 years, 1944 and 1945.

He was elected to Active membership in the Medical Society of the District of Columbia in 1946, and transferred to Associate in 1959, when he moved his offices to Maryland. He was a member of the Lions Club.

He leaves his wife, Mrs. Lois I. Lowry, and 6 children, Malcolm, Warren, Barbara Jean, Beverly Joan, Susan Lois, and Shelley Lynn. The family resides at 6420 Ritchie Road, Forestville, Md. His parents, now living at Virginia Beach, Va., also survive him together with 2 sisters, Mrs. Gladys Pesesec, of Virginia Beach, and Mrs. Ann Cooper, of San Diego, Calif., and 4 brothers, Clifton E. Lowry, of Washington; Gentry Lowry, of Reading, Pa.; and Frank and Burlie Lowry, of Palatka, Fla.

Yvonne van der Reyden Olinick, M.D.

(1925–1963)

Dr. Yvonne van der Reyden Olinick, an Associate member of the Medical Society of the District of Columbia, died suddenly, March 30, 1963, at her home, 2120 Yorktown Road, N.W. She was the wife of Dr. Stanley L. Olinick, Clinical Professor of Psychiatry at Georgetown University School of Medicine and an Active member of the D. C. Medical Society. She practiced under the name of Yvonne Van der Reyden.

Dr. van der Reyden was a native of the Union of South Africa, where she was born February 19, 1925. She became a naturalized American citizen in 1963.

She received her medical degree from the University of Pretoria in South Africa in 1947, and interned at the Pretoria University Hospital and at the Voortrekerhoogte Military Hospital. She also took resident training at both of these hospitals in obstetrics, pediatrics and tropical diseases. She came to the United States and continued her training in psychiatry at the State Hospitals in Raleigh and Chapel Hill, N. C., and at Georgetown University Hospital, where she spent a year, 1957–58. She served on the staff of Chestnut Lodge in Rockville, Md., from 1958 to 1961, when she began private practice of psychoanalysis.

Dr. van der Reyden became an Associate member of the D. C. Medical Society in October, 1962. She was a member of the Washington Psychiatric Society, the Anthropological Society of Washington, the Archaeological Society of Maryland, and the American Association for the Advancement of Science, and a senior candidate in the Washington Psychoanalytic Institute.

She leaves her husband, Dr. Stanley L. Olinick, and a small son, Philip.

Complications of Gastrectomy—Carillo

(Continued from page 165)

employment of the available anatomy during construction of the anastomosis.

There is no "routine" gastrectomy. The operation must be tailored to the needs of the patient.

Summary

In-hospital complications following 657 gastric operations for ulcers have been reviewed.

There has been an apparent increase in postoperative morbidity during recent years.

Complications following surgery for gastric ulcer are minimal when compared with those for duodenal or gastrojejunal ulcer.

A high incidence of afferent-loop obstruction and duodenal-stump leakage is noted with the long-loop anterior resections.

Many complications may be due to overzealous attack on obscure duodenal anatomy, when exclusion of the ulcer and insertion of a duodenal catheter might avert these severe sequelae.

Methods of avoiding these complications have been gathered from the literature and are outlined in this report.

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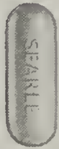

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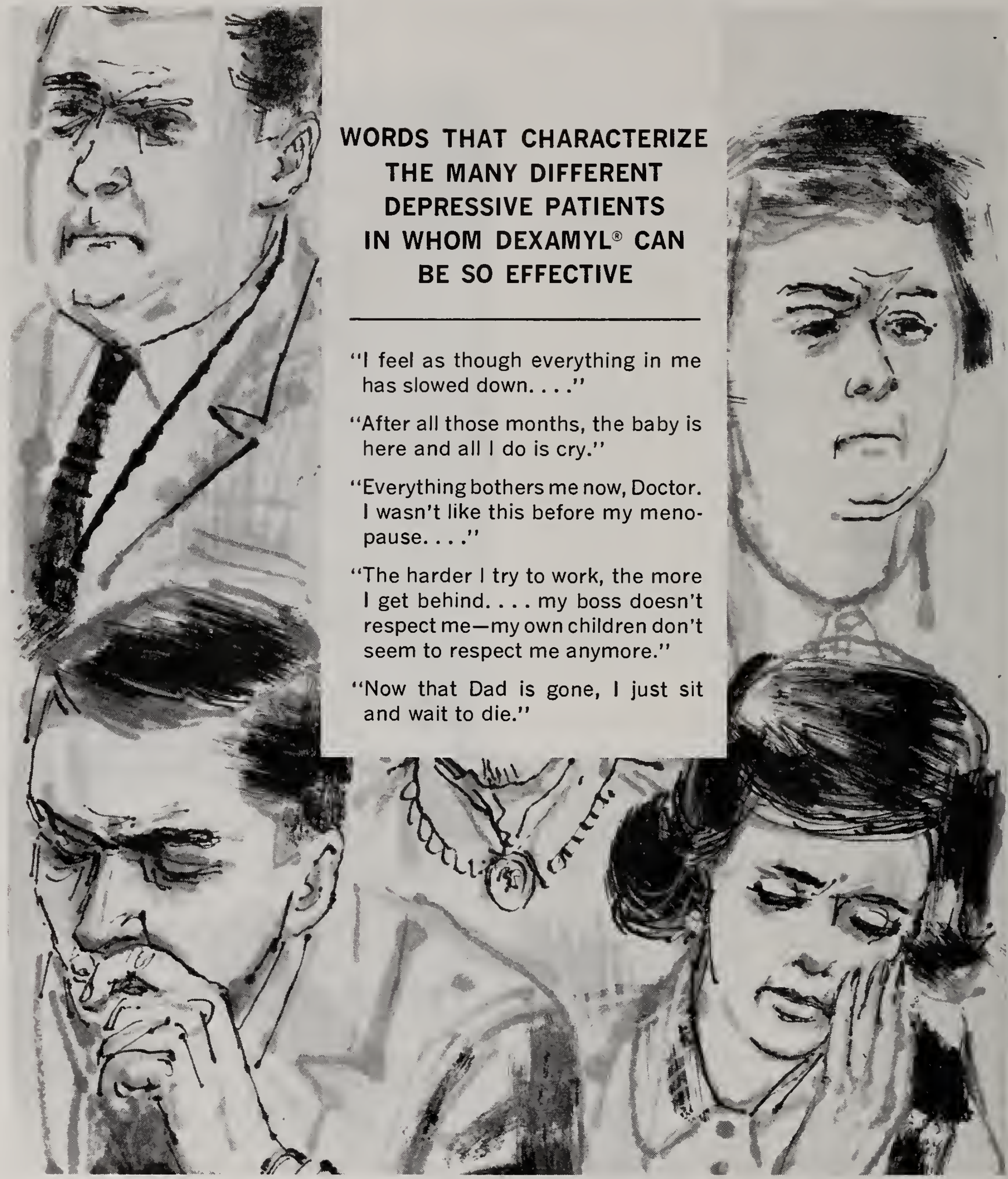

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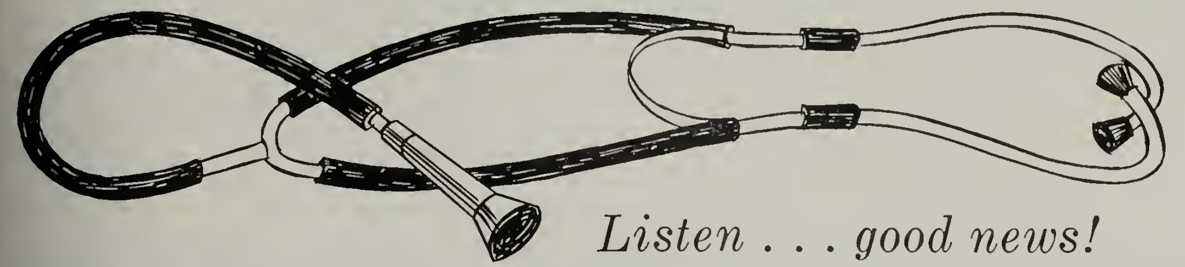

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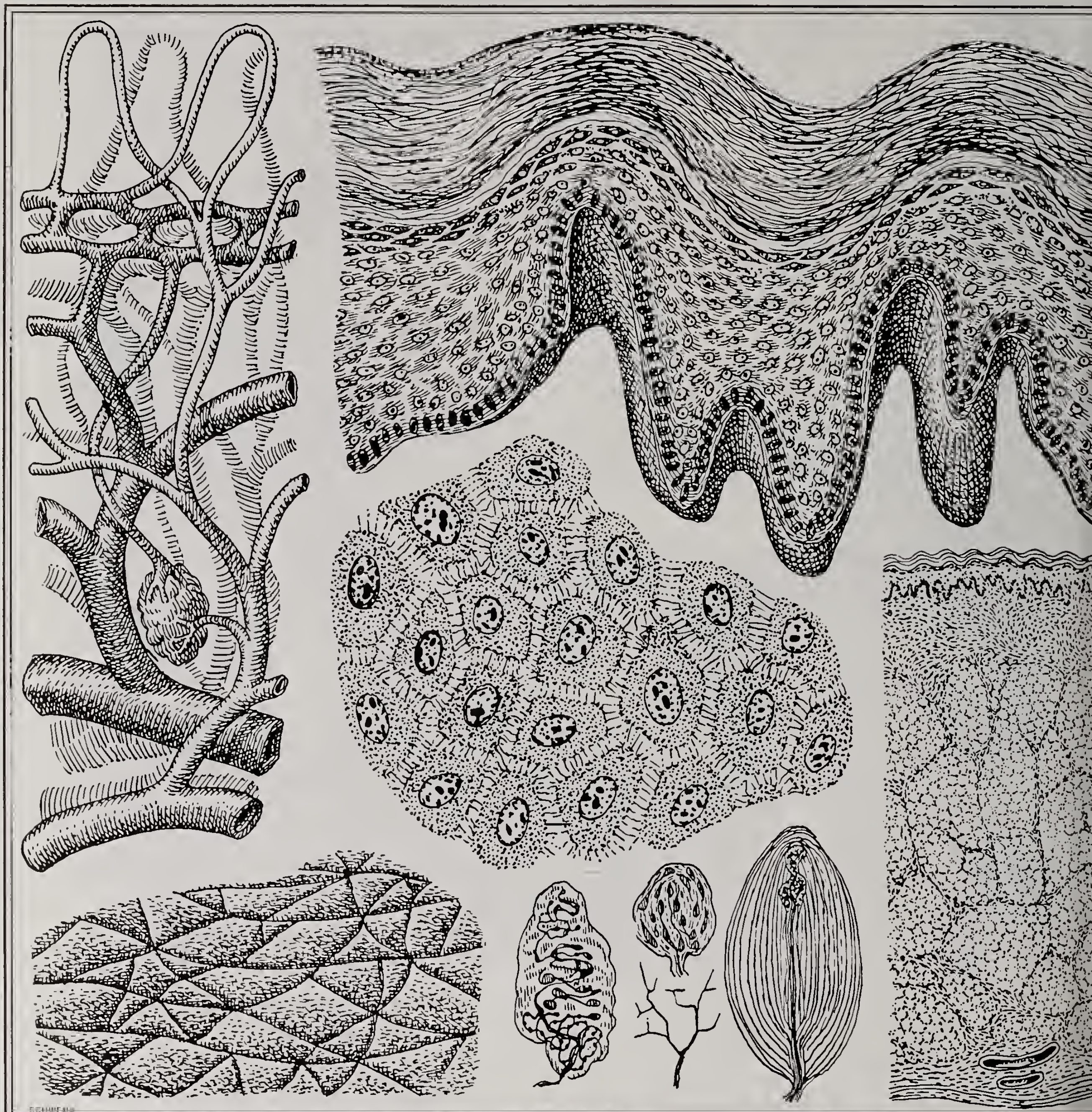
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References: (1) Moyer, J. H., and Heider, C.: Am. J. Cardiol. *9*:920 (June) 1962. (2) Brest, A. N., and Moyer, J. H.: Pennsylvania M. J. *63*:545 (Apr.) 1960. (3) Hutchison, J. C.: Current Therap. Res. *4*:610 (Dec.) 1962. (4) Berry, R. L., and Bray, H. P.: J. Am. Geriatrics Soc. *10*:516 (June) 1962. (5) Feldman, L. H.: North Carolina M. J. *23*:248 (June) 1962.

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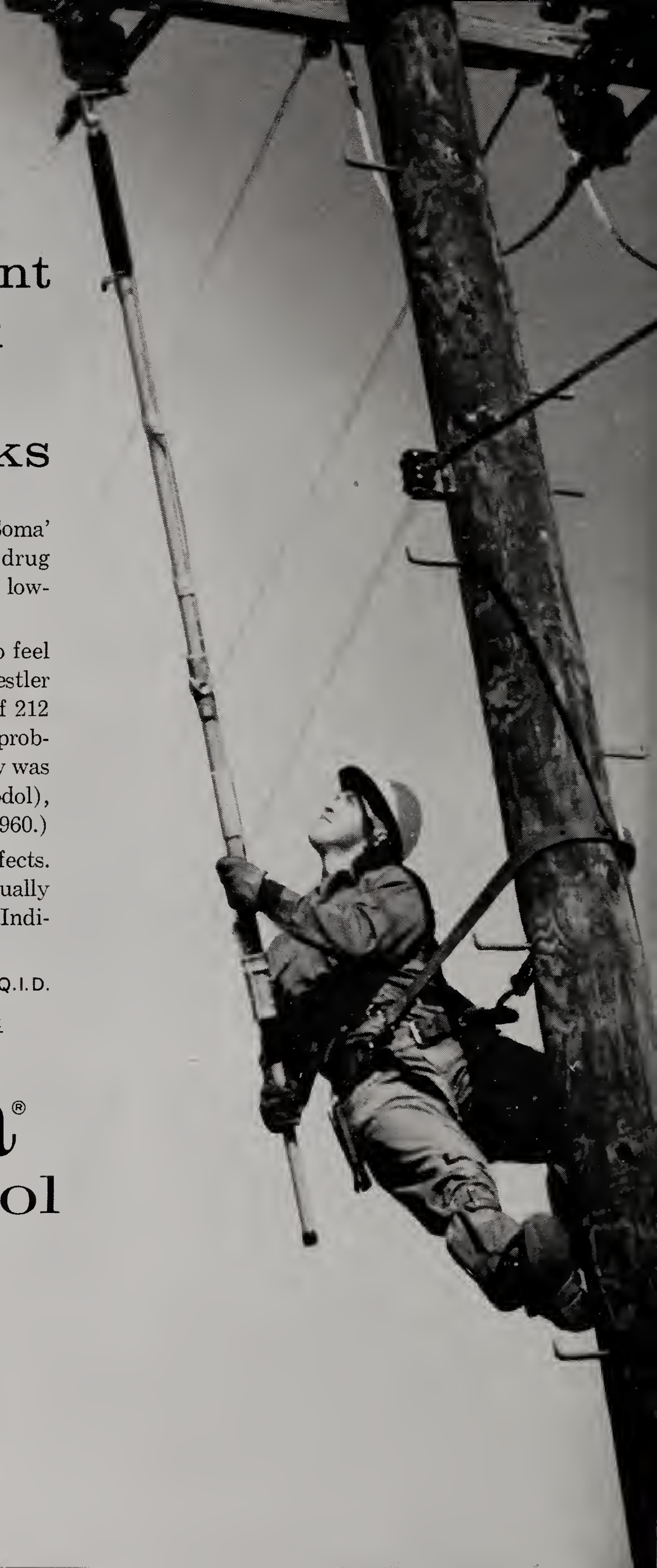

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Todd-Sanford Clinical Diagnosis by Laboratory Methods, 13th ed. Edited by ISRAEL DAVIDSOHN, M.D., F.A.C.P., AND BENJAMIN B. WELLS, M.D., Ph.D., F.A.C.P. Price, $16.50. Pp. 1020, with 417 illustrations, 18 in color, and 22 color plates. Philadelphia: Saunders, 1962.

After a gap of 9 years, "Todd and Sanford" makes a come-back with a thoroughly rewritten 13th edition. In order to produce an up-to-date and authoritative volume in this rapidly expanding field the editors have obtained the collaboration of 18 authors, including major contributions by themselves. The result is a thorough and comprehensive compilation larger than any preceding edition. In addition to the conventional subjects in clinical pathology it includes chapters dealing with isotope technology, microbiochemical techniques, hospital epidemiology, and statistics.

No doubt some readers will favor methods other than those recommended (e.g., bone marrow aspiration) or find occasional omissions through oversight (e.g., determination of serotonin degradation products). Perhaps the main shortcoming of the book lies in its attempt to meet the needs of too large a range of readers. The presentation varies in the different chapters from the elementary to a rather technical level. The editors offer the volume to physicians, medical students and technologists; one might add college undergraduates and specialized investigators to their list.

The book will be useful mainly as a reference volume in the clinical laboratory. The illustrations and color plates are generally of excellent quality and the appendices on reagents, solutions, stains and media add to its usefulness.

GARO S. MATOSSIAN, M.D.

Psychological Development in Health and Disease. GEORGE L. ENGEL, M.D. Price, $7.50. Pp. 435. Philadelphia: Saunders, 1962.

From his experience as internist, then psychiatrist, and finally psychoanalyst, the author has brought together a useful volume to aid medical students and house staffs learn more of the human factors in illness. Dr. Engel has drawn upon his experience as a teacher in the attempt to present a unified picture of human growth, development, and adaptation from birth on. In keeping with this purpose the conventional stress on nosology is absent in favor of teaching something of human behavior. Because of this the author is quite correct in his statement that the student will require additional readings.

At times the author's language tends to be overly complex, but the overall effect is favorable. Although this book was prepared for student use, its main value may be to the teacher who is ever confronted by the challenge of improving pedagogical techniques, a matter particularly difficult because of the inherent need in the teaching situation to consider not only the content to be taught but the personality of the student, his maturity and resistances. In comparing and contrasting his own teaching techniques with those of Dr. Engel, the pedagogue may discover areas for improvement and modification; the extensive use of audiovisual aids is mentioned, with a useful list of psychiatric films.

LEON YOCHELSON, M.D.

Synopsis of Neurology. FRANCIS M. FORSTER, B.S., M.D. Price, $6.75. Pp. 223. St. Louis: Mosby, 1962.

In his preface to this little volume, Dr. Forster, who is Professor of Neurology at the University of Wisconsin School of Medicine, notes that it was written "to present to the medical student the methodologies used in making an evaluation of the neurologic patient and to acquaint him with the most significant features of the disease entities in the field of clinical neurology." Within the limits of this stated design, the book is successful. In a field of medicine where nosologic minutiae and multiple eponyms can lead to confusion, Dr. Forster presents a straightforward, concise, systematized description of the neurologic examination, diagnostic procedures, and the various clinical entities.

The Synopsis is not only of value to the medical student, however, for its basic clarity of presentation also makes it of use to practitioners of medicine in fields other than neurology. It should as well find acceptance as a quick and handy reference in the emergency room of all general hospitals where so many patients with neurologic conditions or complications are first seen. Here again the absence of overabundant detail, statistical tables, and the like is a positive value.

Keeping in mind its purpose, this book is a happy addition to the Synopsis series. Those seeking a neurologist's neurology must look elsewhere, but, then, it was not written for them.

CHARLES E. EDWARDS, M.D.

Atlas of Clinical Endocrinology, including text of diagnosis and treatment, 2nd ed. H. LISSER, A.B., M.D., AND ROBERTO F. ESCAMILLA, A.B., M.D. Price, $23.00. Pp. 489, with 165 plates, including 3 in color. St. Louis: Mosby, 1962.

In this handsome volume the authors offer an extremely interesting and extensive visual presentation of most endocrinopathies, utilizing photographs of patients (with case histories), pathologic sections, X-rays, sketches, and various graphs and tables. While a number of the plates will be recognized as having appeared in print elsewhere, this does not detract substantially from the pictorial display. The illustrations are clear and revealing—often striking, despite a paucity of color plates.

The general excellence of the "atlas" is not matched, however, by the corresponding written text. While the

(Continued on page 34)

Book Reviews

(Continued from page 33)

authors specifically point out that this work is not meant to be a complete textbook of endocrinology, their primary purpose is to include "an abbreviated text which contains all essentials for adequate diagnosis and therapy, even to details of dosage." This goal, in my opinion, was far too broad for an atlas-type format and lent itself to a "handbook" style presentation. For the most part, the information is up-to-date but is frequently sketchy and at times dogmatic. Adequate references are provided.

The appendix is a worthwhile extra, including a table of normal endocrine laboratory values, an outline of hormone preparations in current use, and various charts of normal growth and development.

Despite the limitation of the written text, the "Atlas of Clinical Endocrinology" is a valuable supplement to the endocrine library of all practicing physicians and students of metabolic disease.

Gilbert E. Hurwitz, M.D.

Narcotics and Narcotic Addiction, 2nd ed. David W. Maurer, Ph.D., and Victor H. Vogel, M.P.H., M.D. Price, $9.00. Pp. 339, with 23 illustrations. Springfield, Ill.: Thomas, 1962.

This very excellent reference book on the subject is clear and precise and would be a welcome addition to any medical library. The new second edition lists new drugs with addiction liability, recent advances in the diagnosis and rehabilitation of addicts, and stresses a medical approach to the addiction problem. It is a very informative book and clearly descriptive.

The authors, extremely familiar with the addiction problem, are experts in their own fields. Dr. Maurer views the subject from the sociological angle and has interviewed thousands of addicts. His "argot" of the underworld addict is a classic compilation. Dr. Vogel sheds psychiatric insight on the problem of the drug addict and addiction.

The section on "Treatment of Narcotic Addiction" is largely descriptive and perhaps would be more useful if the psychiatric problems of the addict and the dynamics of the cause of his illness were more fully dealt with.

I would recommend this excellent reference volume to all physicians and others in the health field concerned with this widely discussed but, alas, widely misunderstood human problem.

Randolph A. Frank, M.D.

Office Procedures, 2nd ed. Paul Williamson, M.D. New illustrations by Ann Williamson. Price, $13.50. Pp. 448. Philadelphia: Saunders, 1962.

In the words of the author, "Almost all writing for the general physician is done by academicians; there has been an unfortunate neglect of the principles and procedures of good physicianship." Hence, the purpose of this book, Office Procedures.

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The book is broken down into 14 sections, each concerned with some specialty of medicine: Eye, Ear, Nose and Throat, Musculoskeletal, Pediatric, Office Psychiatry, Roentgenography, Gynecology, Obstetrics, Urology, Proctology, Geriatrics, Minor Surgery, Internal Medicine, Anesthesia, and Physical Medicine. Each of these subjects, that is, subspecialties, is dealt with briefly but succintly and with very adequate sketches illustrating the author's point.

There are quite a few books dealing with office procedures. There is a book called "Specialties in Office Practice" and a book called "Current Therapy," which are quick-reference type books, but these give a feeling that the authors are merely giving you superficial suggestions until a subspecialist can take over and save you from the court room. In this book each paragraph doesn't end with, "Send the patient to a specialist." It illustrates the treatment and it is left to the physician's personal judgment whether a specialist's help is required. To be sure, there are many areas in this book which, probably because they are familiar to us, do not seem worthy of publication. But these are few, and most of the points illustrated are interesting, new, or worth reviewing. In the simple office treatment of many of these common problems that occur in general practice or general medicine—treatment of a nosebleed, pitfalls of office roentgenography, simple office screening test for your psychiatric patients, reductions of fractures and dislocations, and technique of regional anesthesia—80 per cent, I'm sure, would be useful in an ordinary practice.

In summary, then, we have a very concise compilation of the so-called "tricks of the trade" in one book, well indexed and illustrated—an excellent aid both for the physician and his nurse who are on the 'front lines' of medicine.

Thomas F. Cullen, M.D.

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Published by J. B. Lippincott Company *820 pages* $6.75

A TEXTBOOK OF NEUROLOGY by **H. Houston Merritt, M.D.,** *Professor of Neurology, Columbia University; Vice President in Charge of Medical Affairs and Dean of the Faculty of Medicine, Columbia University.*

All diseases of the nervous system met in the daily practice of medicine are in this authoritative work. Present day applications of neurologic principles are detailed, with emphasis on established methods of diagnosis and therapy. Diseases are considered on an etiological, rather than on an anatomical basis.

Published by Lea & Febiger New 3rd ed. *803 pages, 197 illustrations, 124 tables* $12.50

ELECTROCARDIOGRAPHIC INTERPRETATION, edited by **J. Willis Hurst, M.D.,** *Emory Medical School, Atlanta, Ga.,* and **Nanette Wenger, M.D.,** *Emory Medical School, Atlanta Ga.* (Co-authors: **Enrique Cabera, M.D., E. Harvey Estes, M.D., and Herman K. Hellerstein, M.D.**)

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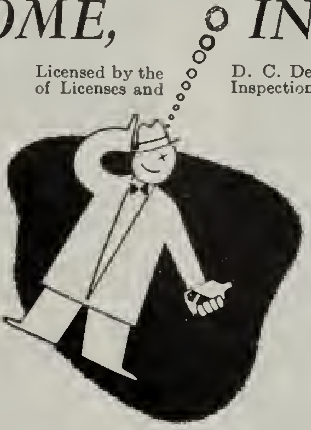

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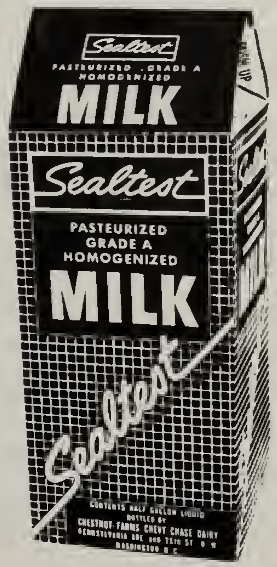
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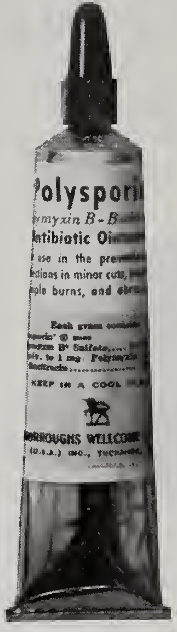

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June 10–12: American Neurological Association. Claridge Hotel, Atlantic City. Address: Dr. Melvin D. Yahr, *Executive Secretary*, 710 West 168th Street, New York 32, N. Y.

June 13–16: Annual Meeting, American Therapeutic Society. Shelburne Hotel, Atlantic City. Address: Dr. Oscar B. Hunter, Jr., *Secretary*, 915 19th Street, N.W., Washington 6, D. C.

June 13–17: Annual Meeting, American College of Chest Physicians. Ambassador Hotel, Atlantic City. Address: Mr. Murray Kornfeld, *Executive Director*, 112 East Chestnut Street, Chicago 11, Ill.

June 15–16: American Diabetes Association. Chalfonte-Haddon Hall, Atlantic City. Address: Dr. Laurentius O. Underdahl, *Secretary*, 1 East 45th Street, New York 17, N. Y.

June 16–20: Annual Meeting, American Medical Association. Convention Hall and Traymore Hotel, Atlantic City. Address: Dr. F. J. L. Blasingame, *Executive Vice President*, 535 North Dearborn Street, Chicago 10, Ill.

June 16–22: Second International Congress on Medical Librarianship. Shoreham Hotel, Washington. Address: Executive Secretary, Second International Congress on Medical Librarianship, ℅ National Library of Medicine, Washington 25, D. C.

June 24–27: American Orthopedic Association. The Homestead, Hot Springs, Va. Address: Dr. Lee Ramsay Straub, *Secretary*, 535 East 70th Street, New York 21, N. Y.

July 14–19: Second International Conference on Congenital Malformations. Americana Hotel, New York. Address: Mr. Stanley E. Henwood, *Conference Secretary*, 120 Broadway, New York 5, N. Y.

August 4–9: International Conference and Exhibit on Aerospace Support. Sheraton-Park Hotel, Washington. Address: Dr. F. J. L. Blasingame, Executive Vice President, 535 North Dearborn Street, Chicago 10, Ill.

August 20–27: International Association for the Coördination of Psychiatric and Physiological Methods and Psychology. Washington, D.C. Address: Dr. José Germain, Institute Nacional de Psicologia Aplicada, Plaza de Santa Bárbara 10, Madrid 4, Spain.

October 13–18: Third International Congress of Plastic Surgery. Sheraton-Park Hotel, Washington. Address: Dr. Leslie H. Backus, Secretary-General, 217 Linwood Avenue, Buffalo 9, N. Y.

October 20–23: American College of Gastroenterology. Shoreham Hotel, Washington. Address: Mr. Daniel Weiss, Executive Director, 33 West 60th Street, New York 23, N. Y.

November 18–20: Annual Scientific Assembly, The Medical Society of the District of Columbia. Statler-Hilton Hotel, Washington. Mr. George W. Cooley, Executive Director, 1718 M Street, N.W., Washington 6, D.C.

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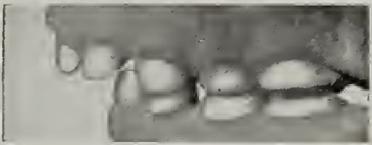

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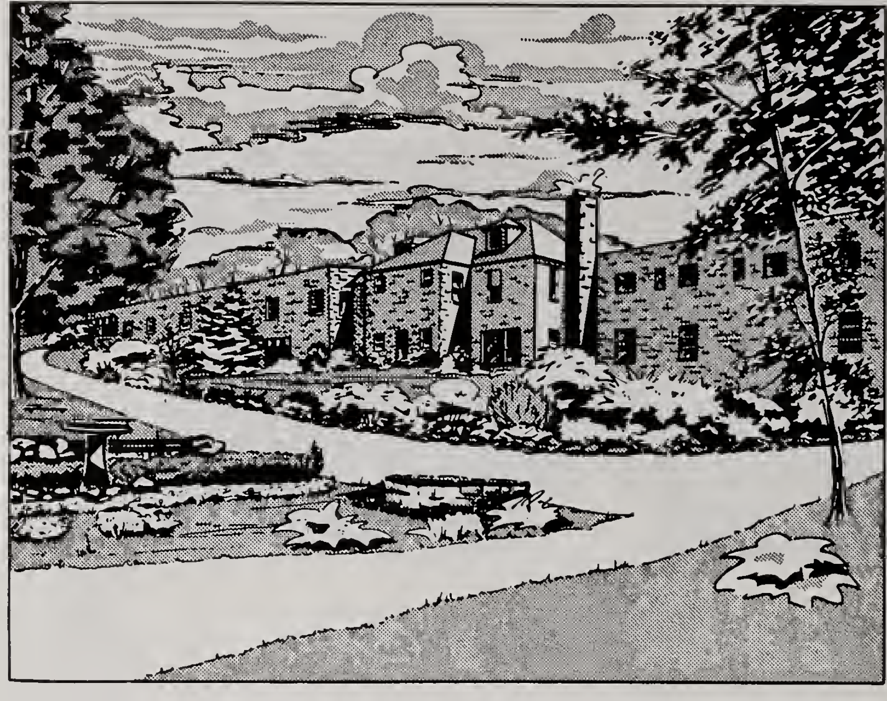

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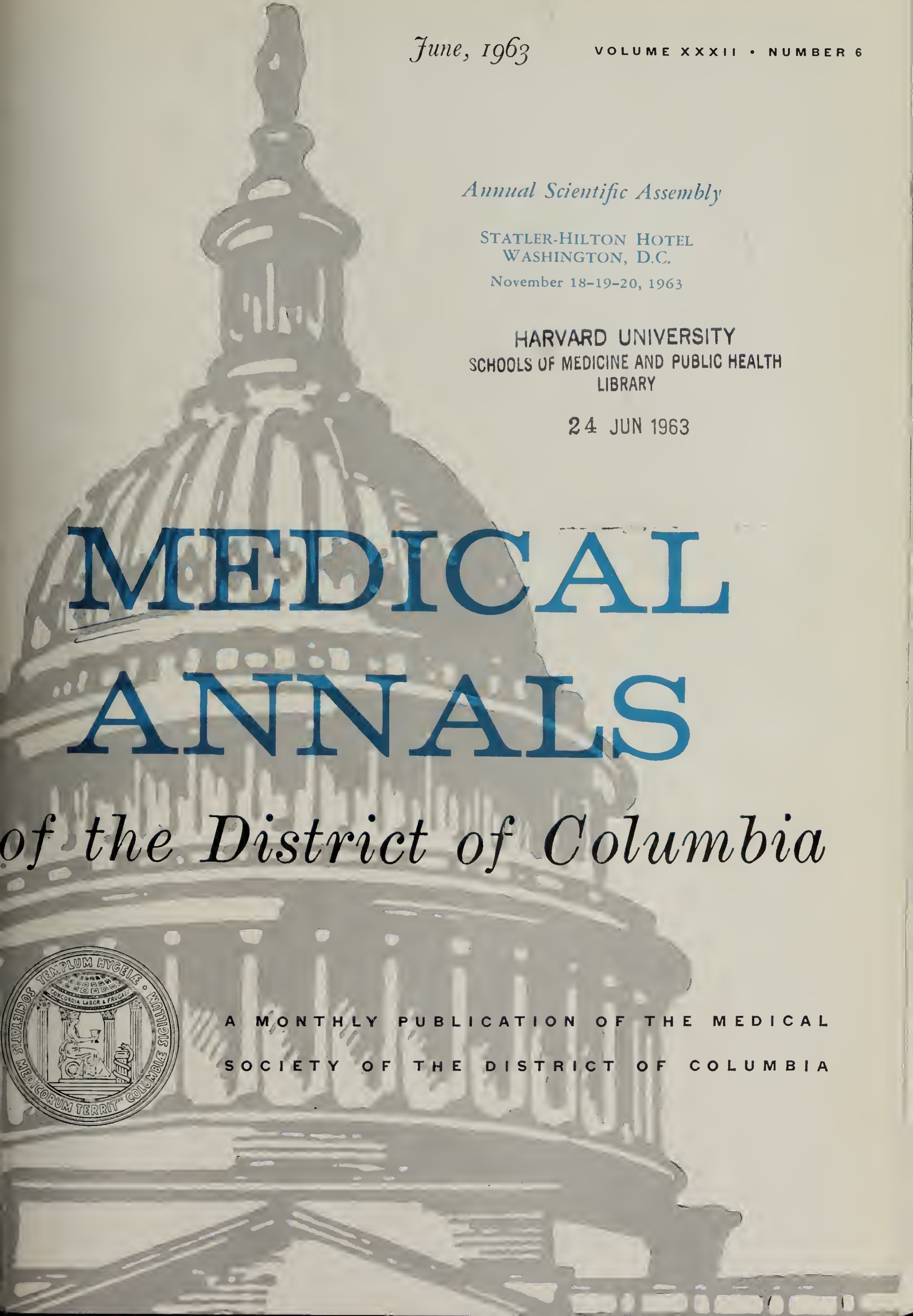

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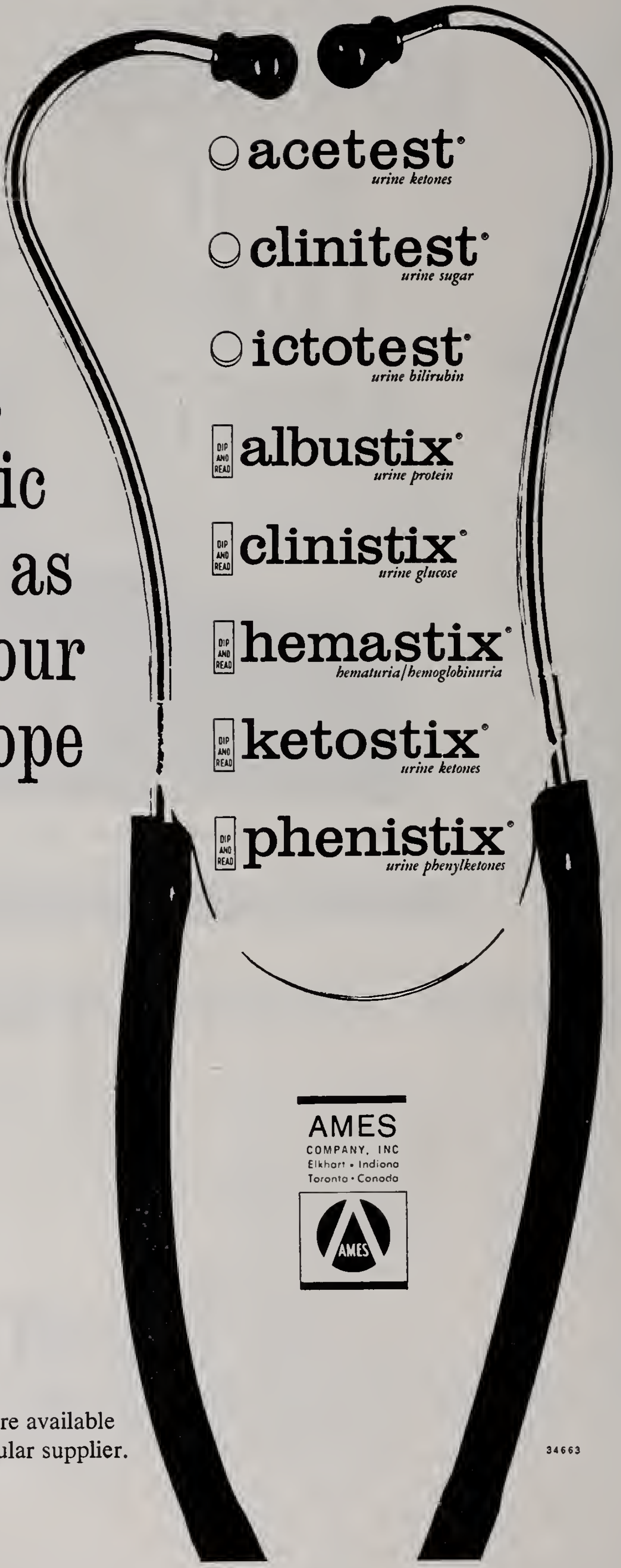

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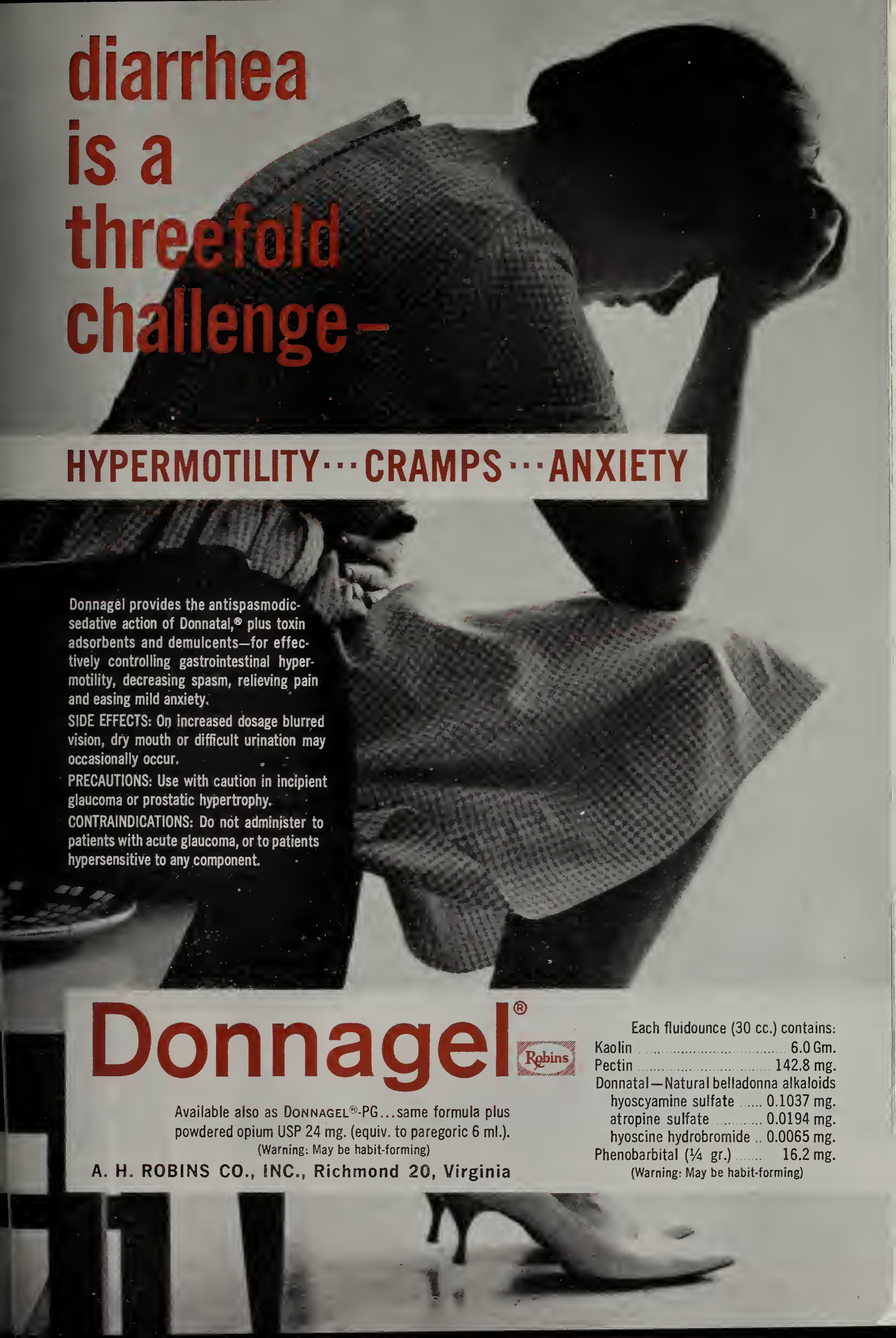
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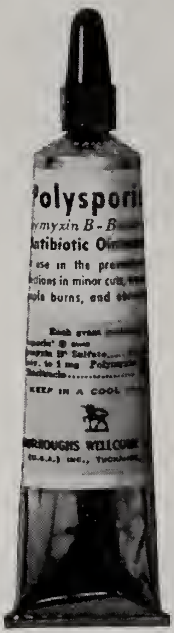

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BOOK REVIEWS

Current Diagnosis and Treatment. Henry Brainerd, M.D., Sheldon Margen, M.D., Milton J. Chatton, M.D., and Associate Authors. Price, paper, $9.50. Pp. 843. Los Altos, Calif.: Lange Med. Publ., 1963.

"Current Diagnosis and Treatment," like the Merck Manual, is the companion to the Physicians' Desk Reference and the medical dictionary. Appearing as a paperback edition, it is intended to serve as a handy source of reference to the practitioner on diagnosis and therapy of general medical subjects. Although not intended as a textbook substitute for medical students, it has received praise from those who employ it as such.

Of the 32 contributors, the majority are on the faculty of the University of California in San Francisco and each is an authority in his respective specialty. Like a text, the format is organized into organ systems and by etiologic agents. There are a total of 28 chapters. The chapter on electrolyte balance is especially well written. The chapters on dietary management and on toxicology combine to provide an accurate up-to-date handbook on almost any subject encountered in a general medical practice. Unlike a textbook, discussion is abbreviated, including only the essentials. Controversial and historical material are omitted. Photographs are also lacking, illustrative material being limited to tables, a few graphs and schematic drawings. Documentation is scanty but several references appear following each section. An appendix contains laboratory tests, new drugs, normal values and miscellany.

As an office guide, "Current Diagnosis and Treatment" is the Manual of Choice.

Roscoe C. Young, Jr., M.D.

Correlative Neuroanatomy and Functional Neurology, 11th ed. Joseph G. Chusid, M.D., and Joseph J. McDonald, M.D. Price, paper, $5.50. Pp. 384, illustrated. Los Altos, Calif.: Lange Med. Publ., 1962.

Drs. Chusid and McDonald have rendered an exceptional service to the fields of neurology and neurosurgery as well as to all the students of medicine and surgery in bringing up to date their last edition of "Correlative Neuroanatomy and Functional Neurology."

Their consideration for price has been most thoughtful and will make it possible for a number of students to purchase this valuable handbook. The paperback edition, even so, will undoubtedly outlast the editions of new material that will be necessary in the years ahead. The fact that it is paper bound does not mean that anything has been omitted. Abbreviated to some degree, yes, but the completeness of this volume of 374 pages is amazing. The brief summaries of the neuroendocrine disorders, the disorders associated with various medical diseases or metabolic disturbances, are sometimes difficult to find in other texts. This book also covers the neurosurgical diagnostic measures and conditions with diagrams, X-rays, and tables to give the maximum amount of information at a glance. And I see in all this material the guiding hand of Dr. Mahoney, student of neurological surgery at St. Vincent's Hospital, New York.

In summary, this is a handbook dealing with neuroanatomy, neurodiagnosis, diseases of the central nervous system both medical and surgical, containing a world of information that should find its widest acceptance with students, interns, and residents. For practitioners and specialists alike, it is an interesting book to have to scan the entire nervous system. It is recommended for value received in this day of inflated costs for glossy paper and fancy bindings.

William T. Spence, M.D.

Malpractice Law Dissected for Quick Grasping. Charles L. Cusumano. Price, $10.00. Pp. 132. New York: Medicine-Law Press, 1962.

This 125 oversized-page book, written by an attorney with the physician in mind, with 19 pages devoted to a General Table of Contents, is a well-written and intensively deep study of the laws involving the many pitfalls of those who engage in the practice of medicine. It covers the aspects of personal injury allegations arising out of failure to render proper medical care in keeping with the accepted and approved medical standards.

The book covers the phases of the various medical specialties. It discusses at length the law of malpractice in a manner which should alert the doctor to a prophylactic approach in many of his cases so as to set up safeguards toward possible malpractice circumstances.

One chapter reviews the liability of hospitals, another the liability of dentists. The malpractice problems associated with treatment of the emergency case is well covered, and the author mentions the various "Good Samaritan" laws now being considered in the various states of the Union.

Contractural liability based on a guarantee is well explained, and the doctor should be alerted to this pitfall. Malpractice claims arising out of abortions and autopsies are well covered. Other possible malpractice problems are included, such as experimentation, abandonment of patients, shock therapy, and medical proof through medical books. He explains ordinary and expert witnesses. He describes what is meant by good and acceptable medical practice, adherence to which should relieve the doctor of malpractice liability. The author shows how the malpractice law is developed. The doctor-patient relationship is considered in detail. He also takes up an explanation of the doctrine of *res ipsa loquitur*.

Technical language is not used in the detailed explanations of malpractice problems. This book is recommended to doctors who desire to become more

(Continued on page 16)

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By Ernest Aegerter, M.D., Professor of Pathology and Director of the Department of Pathology, Temple University Medical Center and School of Medicine; Professor of Orthopedic Pathology, University of Pennsylvania Graduate School of Medicine; Chief in Pathology, Philadelphia General Hospital; and John A. Kirkpatrick, Jr., M.D., Radiologist, St. Christopher's Hospital for Children; Associate Professor of Radiology (Pediatrics), Temple University School of Medicine; Radiologist, Children's Heart Hospital. About 800 pages, 6½" x 9¾", with about 541 illustrations. About $16.00.

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Book Reviews

(*Continued from page 14*)

fully acquainted with the duties they owe to their patients and who wish to know more about protecting their own interests.

Samuel M. Becker, M.D.

Synopsis of Genitourinary Disease, 7th ed. Austin I. Dodson, Jr., M.D., and J. Edward Hill, M.D. Price, $7.75. Pp. 384, with 123 illustrations. St. Louis: Mosby, 1962.

This is the seventh edition of this well-known condensation of urological disease. Like the preceding editions, it is slanted toward the medical student and deals with genitourinary disease in a broad but superficial fashion.

It is markedly surgery-oriented, with little attention to disturbance of renal function. Some of the more recent advances in the diagnosis and treatment of renal hypertension are conspicuously absent. A short section on urinary diversion would have been welcome.

The book reads well, and is conveniently divided into 14 chapters on infections, tumors and calculus diseases. The subdivisions of each chapter and the use of large type heading and subheadings make it particularly easy to outline the general field of urology.

I think the book can be recommended to medical students.

Joseph Bloom, M.D.

Preventive Pediatrics Child Health and Development. Paul A. Harper, M.D., M.P.H. Price, $14.95. Pp. 798, illustrated. New York: Appleton, 1962.

Dr. Harper's book is a well written review for medical and allied personnel working in the field of health supervision of children. Its résumé of the subject of child health and human development is complete, and it serves as a good reference for the practicing pediatrician. The first chapter of the book is especially interesting since it deals with the predictable problems of growth and behavior, and it reviews problems which the practicing pediatrician confronts in practice every day. The usual pediatric textbooks do not handle these aspects of pediatrics as well and as completely as Dr. Harper has done. The chapters on Public Health Services for all children, Public Programs for Handicapped Children, and Selected Topics in Social Medicine are extremely well written and give the reader more insight into the problems discussed and how aid may be offered.

In general, the book is complete and well written. It serves as a reference manual on growth-development, reviews some common problems in the supervision of well children, and, in addition, discusses some of the problems of the handicapped child. It is well worth the attention of people in pediatrics and related fields.

Morris Feitel, M.D.

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Synopsis of Roentgen Signs. Isadore Meschan, M.A., M.D., with the assistance of R. M. F. Farrer-Meschan, M.B., B.S. (Melbourne, Australia), M.D. Price, $11.00. Pp. 436, with 1,488 illustrations on 465 figures. Philadelphia: Saunders, 1962.

The authors have in essence presented a synopsis of one of their previous books, "Roentgen Signs in Clinical Diagnosis." The original book, which is much larger, was most comprehensive in coverage of the diagnostic as well as the technical aspects of radiology, though, of necessity, brief in detail. A synopsis, therefore, of this previous book is doomed to the briefest of outlines and explanatory notes. Since the synopsis is presented primarily for medical students, its brevity, combined with a simple, clear presentation, is advantageous for the most part.

The authors have planned each page as a "midget exhibit" so that an organized message is obtained. The material ranges from the technical background of radiology to the radiology of all systems and organs. This is not a reference book, yet the index is more than adequate for the purposes of this synopsis. The chapters on fractures, bone diseases, and the gastrointestinal tract are most worthwhile. The chapter on protection would be better if it contained information on dosimetry and natural background radiation.

While this synopsis may be brief in detail, it does give a comprehensive coverage of diagnostic radiology along with numerous clear illustrations and radiographs. Chapter by chapter, unusually clear outlines of the major and minor clinical radiographic problems are given, making this a valuable beginner's book in radiology. This synopsis appears to be the answer to the constant question of medical students, "What is a good beginning book in radiology?"

Edward D. Soma, M.D.

NEW AND FORTHCOMING BOOKS

MEDICAL MYCOLOGY by **Chester W. Emmons, Ph.D.,** *Chief, Medical Mycology Section, National Institute of Allergy & Infectious Diseases, Bethesda, Md.,* **Chapman H. Binford, M.D.,** *Chief, Geographic Pathology Division and Chief, Leprosy Branch, Armed Forces Institute of Pathology, Washington, D. C.,* and **John P. Utz, M.D.,** *Chief, Infectious Disease Service, National Institute of Allergy & Infectious Diseases, Bethesda, Md.*

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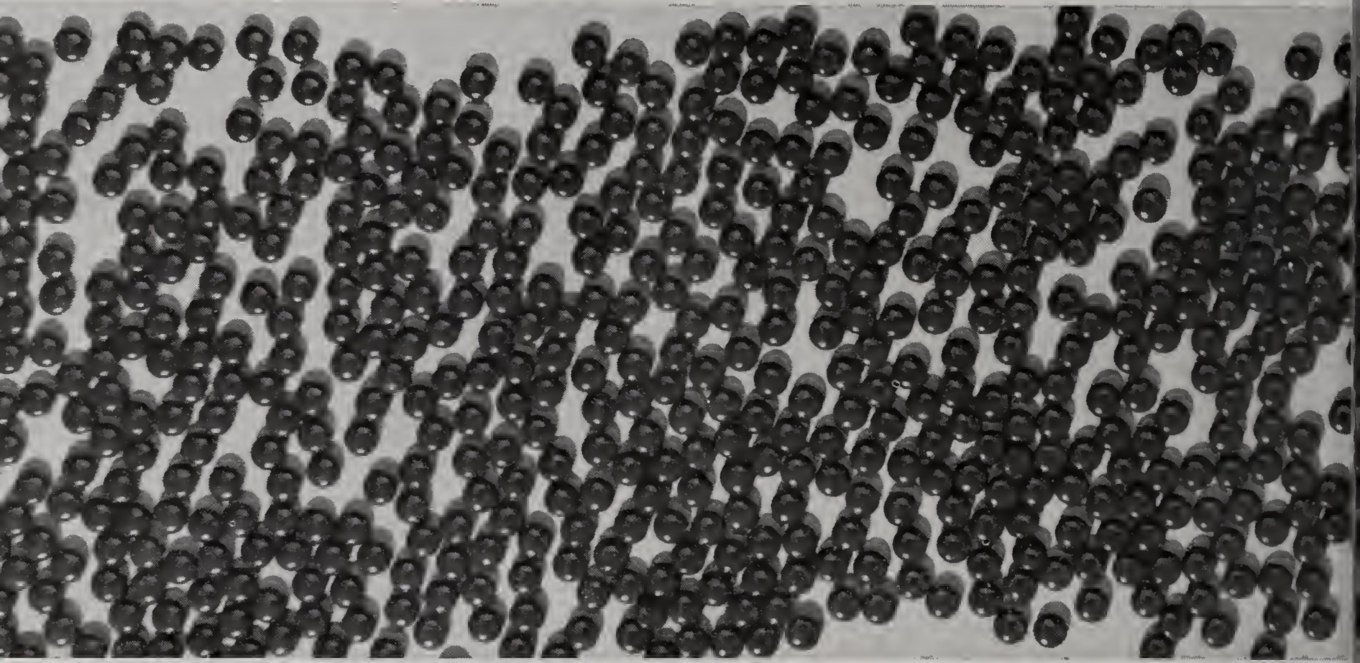

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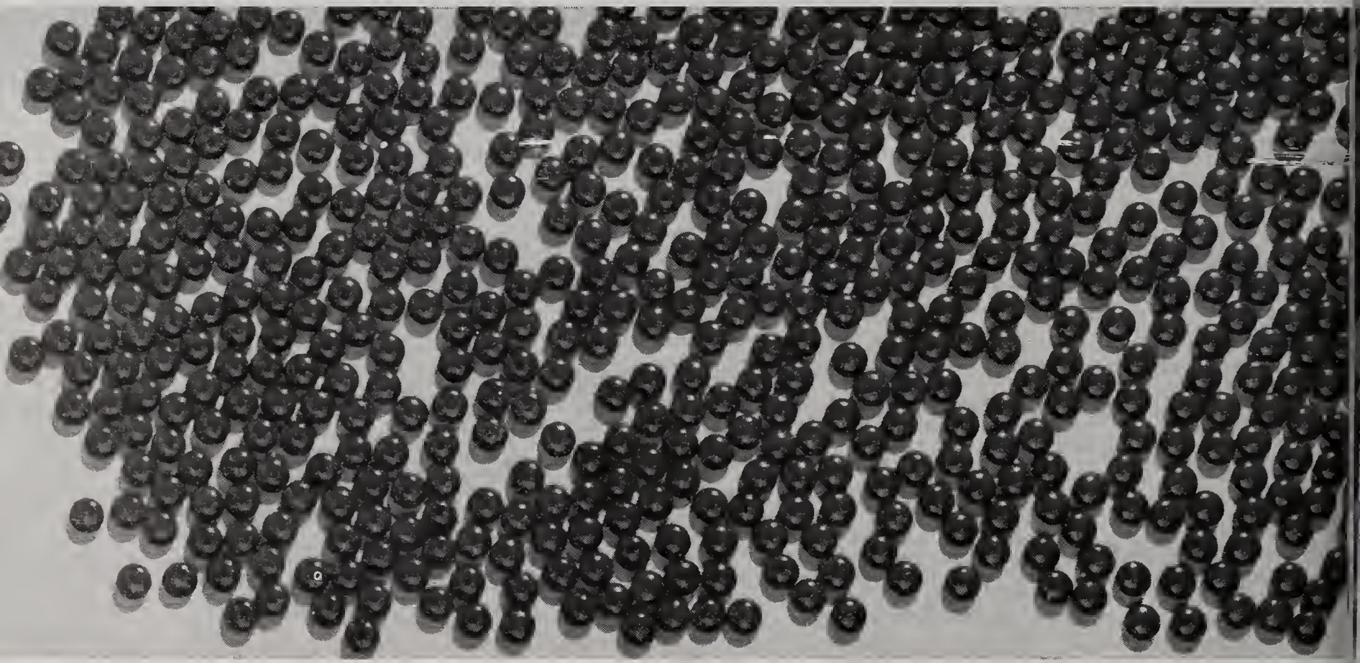

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Some Current Concepts in Infectious Diseases*

Part I. Tripartite Interrelationships of Drug, Microbe and Host

WILLIAM J. MARTIN, M.D.

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Concepts currently embodied in the efforts of physicians having a special interest in infectious diseases frequently represent the speculations of observers who preceded us by years and sometimes by hundreds of years. Then as now, notions of ultimate causes reflected tenets of the time and available experimental knowledge. Now as then, on objective measurement of the extent of man's accumulated knowledge in the field of infectious diseases hypothesis still appears to outweigh fact. However, with the ever-increasing means to subject the validity of speculation to scientific testing, documentation of fact has increased in parallel fashion. Postulates engendered largely via extraordinary reasoning and foresight often have proved to be incentives to experimental studies culminating in the acquisition of data which have made man's battle with infection progressively more successful. That experimental data ultimately have verified many of these postulates may compliment more the intellectual keenness of our medical forebears than our improved capacity to prove the postulates factual. In any event, a review of some current concepts in infectious diseases may help define present limits of our knowledge in these areas.

Antimicrobial Action of Drug

The complete mechanism of action for any of the antimicrobial agents is not fully known. In investigation of these mechanisms, even though specific effects on microörganisms are observed, it is not possible to state whether they are primary manifestations of antimicrobial action or secondary effects.

In the microbe there are several sites susceptible to attack by drugs: the enzymes essential for certain metabolic reactions, the cell wall, the cytoplasmic membrane, the cytoplasm, and the nuclear material. Many antimicrobial agents appear to act by interfering with specific enzymatic reactions necessary for the continued integrity of the microörganism. As examples of such chemical antagonism, a mechanism of action of sulfonamides appears to be competitive inhibition of para-aminobenzoic acid (PABA) utilization. This concept holds that, in their chemical constitution, the sulfonamides so resemble this essential metabolite of the microbe that the microörganism accepts the drug in the place of PABA. PABA and its derivatives are coenzymes for several enzymatic reactions essential to microörganisms. PABA is a constituent of the vitamin, folic acid. By preventing incorporation of PABA into the folic acid molecule, since folic acid is a vital component of several coenzymes, the sulfonamide may block microbial synthesis of protein.

An intact cell wall is required for a microbe's continued existence. This wall, lipoprotein in nature, helps separate the protoplasm from its environment and regulates the flow of solutes in and out of the cell. Penicillin, by interfering with the formation of "mucocomplex" or mucopeptide, may prevent synthesis of the cell wall and hence bring about lysis of the bacterial cell.

Streptomycin inhibits several critical cytoplasmic processes including an oxalacetate-pyruvate condensation reaction carried out by some microörganisms, and like polymyxin B also may disturb the selective permeability of the cell wall. Tetracyclines interfere with certain phosphorylation reactions essential to microbial growth and function, and like chloramphenicol also may block protein synthesis.

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* This article is being published in 6 parts, of which this is Part I. Part II follows. The others will appear in later issues of the Annals.

In any event, the antimicrobial agents in current use appear to exert their effects via direct action on susceptible microörganisms, rather than by enhancing the mechanisms of host defense. As a generalization, antimicrobial agents so retard the rate of growth of susceptible microorganisms that host mechanisms of phagocytosis, lysis, and so forth are given an opportunity to dominate. Therefore, in attempts to evaluate the response to a given antimicrobial regimen defense mechanisms of the host must enter into one's considerations.

Absorption of Drug

With almost every antimicrobial agent designed for oral administration there is a small group of patients who absorb the drug poorly, as an individual idiosyncrasy, and who fail to demonstrate optimal serum concentrations.[1-3] In addition to such individuals, one should recall that some drugs such as phenethicillin and oxacillin are not well absorbed when ingested in association with food and that a drug causing diarrhea may not be well absorbed. In this same regard, hypotension as in bacteremic shock may disallow absorption from an intramuscular depot.

Distribution of Drug

The distribution of an agent in the body fluids[4-8] and tissues[9-11] is an important consideration, since, if the drug does not contact the organisms, either the organisms must be eradicated by host mechanisms or their persistence and multiplication will result in treatment failure. In certain infections the causative bacteria may be located within the tissue cells of the host and the ability of antimicrobial agents to penetrate tissue cells is variable. As an example of the latter, the intracellular and extracellular concentrations of tetracycline may be equal, but the intracellular concentration of streptomycin may be considerably less than its extracellular concentration. Factors such as thrombosed vessels, fibrin deposits, and pus may disallow contact of the drug with the microbe. Blood and tissue proteins may bind the drug and at least temporarily neutralize its antimicrobial action. In necrotic tissue the pH may be acid and hence less favorable for the action of certain drugs such as a sulfonamide or streptomycin.

Intrinsic Antimicrobial Capacity of Drug

Antimicrobial agents that appear to be most dependent on host mechanisms for effectiveness are those classified as bacteriostatic, such as the sulfonamides, chloramphenicol, and the tetracyclines. The drugs appearing to be least dependent on host factors for effectiveness are those classified as being bactericidal and include penicillin, streptomycin, and bacitracin. As a generalization, so-called bactericidal drugs are more effective clinically than bacteriostatic ones, but there are few infectious processes in which a bactericidal effect is mandatory.

Nature of Infection

The nature of the infectious process also exerts a decided effect on the potential therapeutic response, as in chronic infections of the urinary tract, wherein response to antimicrobial agents often is poor yet acute urinary infections may subside without treatment.[12-15] In general, infection due to organisms resistant in vitro to concentrations of antimicrobial agents obtainable in the body is not likely to respond in vivo. However, there are known discrepancies between in vitro and in vivo results,[16, 17,18] as when Proteus organisms resistant on in vitro testing respond to combined streptomycin-tetracycline therapy and when, in the contradistinct phenomenon, other organisms appear to be sensitive in vitro but treatment in vivo fails. The metabolic activity of the causative bacteria also is a factor worthy of consideration, since, under some circumstances, "persisters" may survive a period of treatment and, in theory at least, may produce a clinical relapse. The individual strain of microbe responsible for a given infection is important, as exemplified by strains of *Escherichia coli* containing K antigen, which are more toxic and appear to be more resistant to the normal defense mechanisms of the host than are other strains.

Factors Modifying Host Response

Among the multiple factors that exert an effect on the host's response to infection are age, race, sex, nutritional state, presence of specific antibody, portal of entry of the potential pathogen, associated conditions, and treatment.[17-28] The child is more susceptible to certain serious infections such as diarrhea caused by strains of *E. coli* and to tracheobronchitis and meningitis caused by *Haemophilus influenzae*, but children are relatively resistant to brucellosis;

the converse is true for the adult. Serum from most children exerts only a feeble bactericidal effect on *H. influenzae*, but serum from most adults has a rapidly lethal effect on the organism. The Negro is comparatively more susceptible to coccidioidomycosis and tuberculosis than is the Caucasian but is relatively resistant to vivax malaria. Women are more likely than men to have infections of the urinary tract. That malnutrition enhances susceptibility to infection may be exemplified by the increased incidence of certain infections, such as pneumococcal meningitis in the alcoholic. Prior contact with a microörganism by infection or immunization may assure against future infection, although discrepancies in this regard are common knowledge. *Escherichia coli*, a normal member of the gastrointestinal flora, may cause serious infection, including fatal bacteremia, when it gains access to extra-enteric areas. Agranulocytosis, hypogammaglobulinemia, diabetes mellitus, cirrhosis, obstruction of a hollow viscus, ischemia, and foreign bodies such as calculi may hamper host response to infection. The paradox of therapy is that recovery may depend upon the proper administration of certain forms of treatment, but use of radiation, antimetabolites, adrenal steroids, and surgical and manipulative procedures, in addition to the antimicrobial agents themselves, may militate against host defenses in their attempt to eradicate infection.

Innate Host Resistance

In the combating of infection, natural or innate resistance is of considerable importance. Such resistance manifests the body defense mechanisms displayed by the subject not having had prior exposure to, or experience with that infection. In an infected patient, particularly one being treated with so-called bacteriostatic antimicrobial agents, recovery may be largely dependent on the presence and degree of such innate host powers of resistance. Among the mechanisms of innate immunity are those which aid in localizing the infection, such as vasodilatation, increased stickiness of the capillary endothelium, and leukocytic diapedesis. A defect in the patient's ability to localize an infectious insult may place him beyond the therapeutic ability of a given antimicrobial agent.

Inflammatory response. The establishment and the multiplication of microörganisms in tissue cells call forth an inflammatory response, beginning with dilatation of local capillaries from which plasma escapes. Consequently, fibrin forms a network that occludes the lymphatic channels and tends to limit the spread of the microörganisms. Polymorphonuclear leukocytes stick to the capillary walls and then, stimulated by substances in the inflammatory exudate (chemotaxis), migrate out into the area of injury. Leukocytic phagocytosis of the microörganisms and their intracellular digestion follow, but ultimately the pH of the inflamed area becomes acid and proteases therein cause lysis of the leukocytes. Thereafter large mononuclear macrophages appear and engulf the leukocytic débris and remaining microörganisms.

The susceptibility to certain infections in patients with poorly controlled diabetes mellitus may be due to impairment of the local exudative cellular response. In healthy subjects and in those having well-controlled diabetes mellitus an exudative response usually begins within an hour and a half after surgical abrasion of the forearm and reaches a peak within 3 hours. Patients with uncontrolled diabetes may fail to show any response for the first 3 hours. The principal impairment is in the early granulocytic response, with the later stage of the local exudative cellular response following a relatively normal pattern. Control of acidosis usually restores the exudative reaction to normal.[29]

The inflammatory response also may be modified by the species of microörganism involved. The coagulase of certain staphylococci may enhance the formation of fibrin walls and hence contribute to the limitation of their spread through the tissues. Conversely, certain streptococci via their release of streptokinase (fibrinolysin) and hyaluronidase abet their more rapid spread through the tissues. Streptokinase (fibrinolysin) activates plasminogen, the proteolytic enzyme of plasma, to plasmin, which dissolves fibrin. The enzyme hyaluronidase hydrolyzes hyaluronic acid, a constituent of the ground substance of connective tissue.

Phagocytosis. Phagocytosis of microörganisms is not synonymous with their destruction. Ingested microbes may multiply within the phagocyte, causing its eventual destruction and release of increased numbers of microörganisms. Tubercle bacilli, *Salmonella typhosa*, *Pasteurella tularensis*, and Brucella organisms may multiply intracellularly, and coagulase-positive staphylococci may grow in microcolonies within the leukocytes with ultimate destruction of the cells. Persistence of certain infection, the course of which may be characterized by remissions and exacerbations, such as brucellosis, theoretically may be related to continued intracellular existence and periodic release of the causative organisms. Incidentally, there are at least 5 organisms causing bacteremia which may be visible intracellularly, and extracellularly as well, in smears of the peripheral blood, particularly those of the buffy coat. These organisms are staphylococci, streptococci, meningococci, *Bacillus anthracis*, and *Pasteurella pestis*.

Phagocytosis is enhanced by the presence of specific antibodies which coat the surface of the microörganism and facilitate its engulfment by the phagocyte. Experimentally, in the absence of specific antibodies, phagocytic hepatic cells fail to clear pneumococci from the portal circulation. Also, the trapping of gram-negative enterobacilli by Kupffer cells may be enhanced by serum; whether addition of complement or properdin also enhances such phagocytosis is not established beyond dispute. The increased incidence of certain infections, such as enterobacillary bacteremia in patients having severe hepatic disease, theoretically may involve some defect in liver-dependent circulating defenses, which disallows intracellular destruction of engulfed bacteria. However, phagocytosis can occur in the absence of serum antibodies against particular microörganisms, a phenomenon that has been referred to as surface phagocytosis and that is briefly described as follows. In the absence of specific antibody, on a smooth surface such as the normal capillary endothelium or the visceral peritoneum, phagocytosis is almost nonexistent, but if the surface is roughened, as by fibrin deposits, phagocytes are able to pin down and ingest bacteria. In the presence of specific antibody, the nature of the surface is unimportant, since the antibody-coated bacteria become sticky, adhere to the phagocytes and are engulfed readily.

Polymorphonuclear leukocytes are described as containing 2 basic proteins, lysozyme and phagocytin, which may contribute to the bactericidal power of these cells.[30] The cytoplasm of both polymorphonuclear leukocytes and macrophages becomes more acid after phagocytosis, and the increased acidity may be deleterious to the engulfed microörganisms. The low intracellular pH may reflect production of lactic acid through glycolysis. A trypsinlike enzyme in leukocytes and a pepsinlike enzyme in macrophages have been described.

Circulating Host Defenses

In addition to the local defense phenomena, circulating defense substances may, when defective in quality or quantity, hamper the expected efficacy of an antimicrobial agent.

Antibodies. Antibodies are specialized serum proteins apparently synthesized *de novo* under stimulus of the host's exposure to antigens and having the property of reacting with the antigen that caused their production or with related antigens. Electrophoretically, the major part of the antibody content of serum is in the gamma fraction of the globulins, although certain antibodies are found in other fractions such as the beta and alpha-2 fractions, or are distributed throughout several fractions. On recovery of the patient from a specific infection, antibody nitrogen may measure up to 0.1 or 0.2 mg. per ml. of serum. Since serum normally contains about 10 mg. of protein nitrogen per ml., antibody may account for 1 or 2 per cent of total serum protein; however, the antibody content of serum is extremely variable. Owen and colleagues[31] have found the half-life of antibody to be 20 to 24 days.

In early embryonic life the ability of tissues to form antibodies is lacking, which may account for the fact that microörganisms that will not infect the chicken will grow readily on the embryonated egg. The age after birth at which tissues begin forming antibody is not known precisely. However, that susceptibility of the newborn or very young to certain microörganisms is much greater than in adults is common experience.

Current evidence indicates that specific antibodies are formed in plasma cells and perhaps also in cells of the lymphocyte-macrophage system, chiefly in the lymph nodes and spleen. A concept currently under investigation is that immunologic control may be centered in the thymus. In patients having congenital hypogammaglobulinemia there is a deficiency of plasma cells in both the bone marrow and the lymph nodes. In this condition, histologic examination of lymph nodes reveals a very thin cortex, a deficiency of primary and secondary follicles, and an abundance of fibrous tissue extending out from the hilus.[32] Analysis of these nodes reveals no gamma globulins or specific antibodies. In response to stimulation with an antigen these nodes react only by swelling of the reticuloendothelial cells, while a normal node demonstrates increase in breadth and cellularity of the cortex, well-defined follicles and active germinal centers, and an increase in medullary cords with large numbers of plasma cells throughout, containing gamma globulin and specific antibodies. This reaction would appear to corroborate some direct connection between the plasma cells and the ability to form antibody.[33]

Originally the existence of a number of different antibodies was postulated, but with the advent of more modern chemical and immunochemical techniques all the humoral antibodies were thought to be similar. The unitarian concept of Zinsser held that there was only one type of antibody responsible for the various reactions in which antibodies participate, such as phagocytosis (opsonins), direct bacterial lysis without prior phagocytosis (bacteriolysins, bacteriocidins), agglutination of bacilli (agglutinins), precipitation of bacterial extracts (precipitins), and complement-fixation of bacilli or their extracts (complement-fixing antibodies). However, this concept has been altered by the knowledge that circulating antibody may be the usual bivalent precipitating type, or it may be univalent. Also the wide variety of tissue antibodies appears to differ from the usual bivalent type, so that a unitarian concept is no longer completely tenable. Lysis and complement-fixation require the presence of complement, while the presence of electrolytes is necessary for agglutination and precipitation. It is estimated that 700 to 800 molecules of serum antibody are required to neutralize 1 microbe, which is also approximately the number required to lyse 1 sheep erythrocyte.

"Natural (normal) antibodies" may arise because of undetected exposure to a specific antigen or to a closely related antigen so that they cross-react rather than because of a genetic property. They may represent a variant of gamma globulin. So-called germ-free animals appear to have significantly lower natural antibody levels. The possible presence of such natural antibodies must be taken into account in all experiments employing "normal" serum.

Bacteria contain a variety of antigens, and, following infection, antibodies to the constituents are found in serum. Streptococcal infection may result in appearance of antibodies to the M protein, C carbohydrate, streptolysin O, and so forth. The appearance of certain antibodies may indicate that the patient has an infection, although these antibodies bear no relationship to specific immunity to infection. As an example of this, one may document streptococcal disease on measuring antibodies to streptolysin O, although these antibodies have no demonstrable role in protection against the disease. Of course, even though antibodies to the significant pathogenic components of a microbe are present, this does not guarantee immunity, since their titer may be insufficient. Protection against influenza virus requires not only the presence of specific antibody in the blood but also a certain titer.

Gamma globulin. Defects in quantity or quality of gamma globulin, because it contains the major part of the serum antibodies, may be associated with serious infectious disease. Hypogammaglobulinemia[34] may reflect immaturity, hypogenesis, destruction or replacement of plasma cells and lymphoid tissues, or be a manifestation of increased catabolism or loss of gamma globulins. Hypogammaglobulinemia occurs as a physiologic and temporary form in early infancy or may be encountered as a congenital sex-linked recessive trait in boys and as an acquired or delayed form in older patients of either sex. In the last-mentioned type, possibly it too is an inherited disease with a longer latent period before becoming clinically manifest. It may represent a process of exhaustion, or perhaps an antigen by repeated attacks effects an "immunization paralysis." In certain conditions, such as chronic lymphatic leukemia, prolonged exposure to radiation, and multiple myeloma, secondary hypogammaglobulinemia may occur. In other conditions such as nephrosis, malabsorption syndromes like regional enteritis and sprue, and exudative enteropathy (Menetrier's syndrome), hypogammaglobulinemia may be part of a generalized hypoproteinemia, but it occasionally occurs in isolated form. Also, as in some cases of multiple myeloma, dysgammaglobulinemia may be present wherein the excessive gamma globulins are functionally imperfect with consequent decreased protection against infection.

As aforementioned, determination of the total quantity of gamma globulin represents a summation of values for a number of different constituent fractions; while for the most part antibodies are gamma globulins, they represent only a part of the total quantity of gamma globulin. In this regard, despite a possible decrease in the concentration of plasma gamma globulin during the latter part of pregnancy, there does not appear to be any decrease in the ability of pregnant females, both human and nonhuman, to form antibodies against a number of antigens. In normal adults there is some 55 Gm. of gamma globulin circulating throughout the body; this is about equally divided between the blood and the tissues, amounting to 600 to 1,200 mg. of gamma globulin per 100 ml. of serum.[35] In congenital hypogammaglobulinemia there is virtual absence of gamma globulins on electrophoretic analysis, and levels of gamma globulin are below 150 mg. per 100 ml. of plasma serum, as determined by immunochemical techniques. In secondary hypogammaglobulinemia, levels of gamma globulin usually approximate 200 to 400 mg. per 100 ml. of serum.

Immune serum globulin, U.S.P., is prepared from pooled human plasma via low-temperature ethanol fractionation and contains about 165 mg. of gamma globulin per ml. of solution, representing a 25-fold concentration of antibody-containing globulins. It may be administered intramuscularly or subcutaneously. In patients having hypogammaglobulinemia, 0.1 Gm. of gamma globulin per Kg. of body weight injected after an initial loading dose of 0.3 Gm. per Kg. and repeated at 30-day intervals usually will decrease the incidence of recurrent bacterial infections. In patients having congenital hypogammaglobulinemia serum levels above 150 mg. per 100 ml. appear to be protective in the majority, and this is achievable on the suggested dosage if the half-life of approximately 1 month is taken into consideration.

Complement. Complement refers to a group of proteins of mixed globulin composition found in normal serum; it participates in a variety of serologic reactions. The amount of complement present in the serum of experimental animals varies markedly under continuous hyperimmunization. There are several components of complement which can be separated by physical and other means. Current concept has it that human subjects having low levels of serum complement probably are not thereby predisposed to infection. Low complement activity may be congenital and has been observed in glomerulonephritis and lupus erythematosus. Levels of serum complement are said to be normal in hypogammaglobulinemia.[36]

Complement does not combine with antigen alone; it is loosely bound by antibody alone but firmly bound only by the antigen-antibody combination. If a mixture of bacteria and complement is incubated and the bacteria removed by centrifugation, complement remains unchanged in the supernate. However, if to the mixture of bacteria and complement one adds sensitizing antibody, neither antibody nor complement can be found in the fluid after centrifugation.

Properdin. Some investigators still believe that properdin exists as a distinct substance, and the most common role assigned to it is that of playing a part in natural or innate immunity.[37] However, other workers doubt properdin's independent existence, and some do not distinguish it from antibody. Properdin has been described as being an euglobulin, which appears to be of the beta fraction of the serum globulins of man and animals, including that of so-called "germ-free" rats, and the levels of which are characteristic of a species. The properdin content of serum appears to be relatively high in rats and mice, low in guinea pigs, and intermediate in rabbits and man. Normal human serum contains not more than 0.02 per cent of its proteins as properdin, or 4 to 8 units per ml. It is described as having an iso-electric point between pH 5.5 and 5.8 and to contain lipid, carbohydrate and phosphorus. Since it has a sedimentation constant between S 24 and S 30, its molecular weight appears to be greater than 1,000,000, and hence about 8 times that of the gamma globulins.

The properdin system, described as consisting of properdin, all components of complement, and Mg^{++}, may be responsible, at least in part, for the natural bactericidal activity of serum against certain gram-negative enterobacilli. In general, the greater the virulence of the strain of enterobacillus studied, the less is its susceptibility to the natural bactericidal activity of serum. Most strains of *E. coli* causing bacteremia resist the bactericidal action of serum; many strains isolated from feces do not. Properdin appears to have less effect against most gram-positive organisms. The properdin system also may be responsible for serum's nonspecific neutralization of certain viruses. Properdin is a necessary component for the measurement of specific antibody to Toxoplasma by the dye test. It may protect animals from death after an injection of gram-negative enterobacilli, or from bacterial invasion subsequent to hemorrhagic shock or irradiation.

Following whole-body irradiation, levels of properdin fall sharply, and in certain species of animals administration of cortisone has been said to decrease properdin levels. Also, injection of endotoxin from gram-negative enterobacilli or of polysaccharides from diverse sources is followed by reduced levels of properdin for about 24 hours, during which time there is increased susceptibility to infection by gram-negative enterobacilli. After about 24 hours there is a return of properdin to levels well above normal, which persist for a week or more, during which there is increased resistance to certain infections.

Levels of serum properdin appear to be normal in congenital hypogammaglobulinemia and in diabetes mellitus. Levels in pregnant women may be below the normal range for women in the same age group. Levels remain relatively constant in a variety of clinical infections but may fall and then subsequently rise in patients having pneumococcal pneumonia and meningococcemia. Decreased levels have been described in patients having severe burns, lymphomas, and disseminated lupus erythematosus. In certain severe infections it may be that prognosis varies with the rapidity and extent to which properdin is mobilized.

Other Host Factors

Phagocytosis-promoting factors, which may be distinct from the aforementioned, have been described as residing in the alpha- and beta-globulin fractions.[38]

Interferon[39] and its antiviral activity currently are the subject of considerable investigations. Interferon is described as being a natural product of mammalian cells which appears to aid them in resisting virus infection; it was discovered in 1957 by Drs. Alick Isaacs and Jean Lindenmann[40] of the National Institute for Medical Research in England. While investigating the action of heat-killed influenza virus they found that a few hours after a cell culture had been treated with a killed virus and mixed with fresh cells it made the cells resistant to virus infection. The resistance appeared to reflect interference with the virus, since fresh cells proved resistant not to just 1 virus but to many. Isaacs and his co-workers[40] later isolated a substance that appeared responsible for such resistance and named it "interferon." It is said that 0.004 gamma of purified interferon is sufficient to block that amount of eastern equine encephalomyelitis virus that would have killed a culture of chick-embryo cells. Analysis of the substance has been interpreted as revealing it to be a slightly basic protein with a molecular weight of about 25,000. Interferon is rapidly destroyed by proteolytic enzymes but not by peptidase, amylase, lipase or nuclease. It contains no detectable nucleic acid, but there is a trace of carbohydrate. Stable at pH values ranging from 2 to 10, it is also readily destroyed by ultraviolet light. Purified interferon does not interfere with respiratory processes in the cell as revealed by demonstrating that it does not produce oxidative phosphorylation in chick-liver mitochondria and does not stimulate aerobic or anaerobic glycolysis in Erlich ascites cells. Neither does it affect glucose utilization or lactic acid production in chick-embryo cells. Infiltrated into the chicken-wing web, the purified substance is prophylactic for Rous sarcoma and reduces both size and number of tumors. It also delays death from Newcastle disease virus in baby chicks. It is ineffectual when given therapeutically after infection, showing that the effects of the substance are not curative but prophylactic. If investigators can synthesize the agent, it is hoped that information will be forthcoming concerning the mode of action and possible clinical potential of this interesting substance.

In addition to the host defense systems mentioned, there appear to be other even less well-understood, antimicrobial factors widely distributed in human tissues and fluids which warrant continued investigation.

Conclusion

It is thus apparent that difficulties in evaluating the precise role of antimicrobial agents in the clinical course of human infections are multiple. This is applicable especially to chronic disease. While the criteria of effectiveness or ineffectiveness, based on the presence or absence of the offending organism following use of an antimicrobial agent, would appear to be an adequate index of its therapeutic potency, such an interpretation represents an oversimplification.

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Some Current Concepts in Infectious Diseases*

Part II. Bacterial Resistance, the Microbial Flora, and Superinfection

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Bacterial Resistance

Bacterial resistance and bacterial susceptibility to a drug are quantitative and not qualitative attributes, since an antibacterial agent in sufficiently high concentrations may inhibit practically all bacterial strains within the drug's spectrum. However, inhibitory effects obtained only at excessive concentrations are without clinical value, and pertinent data concern those species of bacteria or strains within a species that are susceptible to a drug when administered in amounts acceptable to the host.

Theoretic origins of bacterial resistance. There are 2 divergent concepts of the origin of bacterial resistance. Adherents to one concept emphasize that microörganisms resistant to a drug are naturally resistant. Proponents contend that bacterial populations contain variants which are less susceptible to an antimicrobial agent than are the majority of organisms present. Initially these relatively insensitive organisms may be so few that they escape detection. Antibacterial agents may serve to select out the insusceptible from the susceptible organisms, and selective survival of these naturally occurring resistant variants occurs. As the growth of susceptible microörganisms is inhibited by continued therapy the resistant variants multiply and eventually become dominant.

Other investigators adhere to the concept of acquired bacterial resistance, that is to say, resistance of mutational origin. They base their views on the fact that bacteria, in the presence of an antimicrobial agent, may demonstrate the capacity to grow in concentrations of the drug that previously would have suppressed them. The rapidity with which this capacity develops appears to vary with different strains of bacteria and drugs employed. First-step mutants to certain agents such as penicillin, tetracyclines, and chloramphenicol are of low and uniform resistance. With such agents, second-step mutants, or the organisms descended from first-step mutants, have only slightly higher resistance, and the degree of bacterial resistance parallels the consecutive mutations involving a series of multiple genetic steps. This "small-step type" or "penicillin type" of mutation has been presumed to be a function of a single genetic locus.

Conversely, with certain other antimicrobial agents such as streptomycin, erythromycin and novobiocin, first-step mutants may have higher resistance. In this, the "streptomycin type" of presumed mutation, organisms of various degrees of resistance may emerge simultaneously, including those that are completely resistant from a clinical point of view, in a single step. This type of mutation has been presumed to be a function of multiple genetic loci.

Attempted suppression of bacterial resistance. If one accepts the postulate of a mutational origin of bacterial resistance, one then is attracted to attempts to suppress the selection of resistant mutants. Current attempts are based on a concept of Erlich: If 1 cell in 10^6 mutates to resistance to 1 drug, and 1 in 10^6 to another, only 1 in 10^{12} will develop both mutations simultaneously. According to such a concept, doubly resistant mutants have a negligible probability of emerging from a sensitive strain in the presence of effective concentrations of 2 antimicrobial agents. Such considerations underlie the rationale for current advice to combine drugs in attempts to lessen the likelihood of resistant bacterial strains emerging in a given clinical instance.

However, the employment of more than 1 antibiotic with the intent of delaying the onset of bacterial resistance in infections, including that of staphylococci, may not be so reasonable, as current emphasis would indicate. Evidence that organisms including *Staphylococcus aureus* become drug-resistant in vivo is difficult to substantiate. In "closed" infections, such as endocarditis, the administration of a single drug does not enhance the likelihood that insensitive staphylococci will appear subsequently. The transformation of a penicillin-susceptible to a penicillin-resistant staphylococcal infection during penicillin therapy seldom if ever occurs. In other words, staphylococcal infections may be penicillin-resistant before any penicillin is administered, but if the infection is penicillin-susceptible at the start, likely it will remain so. Perhaps to a lesser extent the same generalization may be made regarding the majority of "closed" nonchronic infections treated with any of the antimicrobial agents in common use.

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Relapse during therapy of an infection that was drug-susceptible at the start but that appears to have become drug-resistant is most likely to occur with streptomycin, the sulfonamides, erythromycin, and novobiocin. However, such an occurrence does not necessarily militate against the appearance of naturally resistant strains on the elimination of more sensitive ones, or against superinfection by a resistant strain. Particularly in "open" infections such as wounds, pneumonia, and so forth, resistance may not reflect change in the staphylococci initially responsible for the infection, but rather may indicate superinfection by environmental strains. Combinations of drugs may be more effective than a single drug by preventing the implantation of new strains or in eradicating them, rather than by having suppressed the mutational origin of *de novo* resistant strains. In this regard, it is to be noted that since the incidence of bacterial resistance parallels the total amount of antibacterial agents being employed in a given area, unnecessary use of multiple agents may further contribute to the problem of bacterial resistance.

Drug-microbe relationships in vivo. These relationships within the body are considerably more complex than those pertaining in vitro in the laboratory. In vitro, the environment of the microbe is kept within fairly rigid boundaries, but within the body the host is capable of providing a wide range of environments. Consequently, greater opportunity exists for the microbe to display physiologic heterogeneity to its own advantage. Also, the physiologic activities of the host and his disease process may serve to destroy or to inactivate the drug or to hinder its distribution into the sites of infection. Conversely, mechanisms of the host may enhance the effectiveness of the drug in the inhibition or destruction of the microbe.

Extra-host enhancement of bacterial resistance. Certain extra-host factors may enhance the emergence of resistant strains of bacteria. One factor is duration of bacterial exposure to the drug. Organisms may be only inhibited and not killed on exposure to certain drugs. Inadequate duration of exposure to a drug may enhance the emergence of resistant strains, since the least susceptible organisms are granted comparative opportunity to renew their multiplication.

Also, size of bacterial population may be a factor in enhancing the emergence of resistant strains, since the larger the bacterial population the less likely the infection will be controlled promptly and the more likely organisms of variable sensitivity to the drug will be present. In the latter regard, emergence of resistant strains is therefore more likely.

The metabolic activity of the infecting bacteria may be a determinant in their eventual emergence as resistant to the drug employed. Actively growing bacteria are more likely to be susceptible to antimicrobial agents than are resting bacteria. Conversely, and as aforementioned, metabolically inactive organisms or "persisters" may survive prolonged exposure to a drug. Such dormant bacteria subsequently might produce clinical relapse of the infection.

Some clinical ramifications. Organisms that become insensitive to 1 drug may simultaneously develop resistance to 1 or more additional drugs. Complete cross-resistance may be displayed by organisms against kanamycin and neomycin, and against polymyxin B and colistin, while incomplete cross-resistance may be displayed by organisms against erythromycin and triacetyloleandomycin.

Bacterial resistance may allow an indigenous strain to superinfect a patient when that strain resists the drug being employed, especially when antagonistic members of the normal flora have been eradicated. In addition to staphylococci, gram-negative enterobacilli and also fungi may cause infections via this endogenous mechanism Of course, superinfection by resistant staphylococci and other organisms of exogenous or environmental origin is also possible.

Drug resistance is not characteristic of all strains of bacteria, and organisms responsible for some of the common infectious diseases have remained susceptible to antimicrobial agents. There is no evidence that pneumococci, gonococci and *Streptococcus pyogenes* are resistant to the action of penicillin. In contradistinction, gonococci resistant to sulfonamides and tubercle bacilli resistant to streptomycin are commonly encountered, and one of the obvious problems in this category is that of *Staphylococcus aureus*, many strains of which are insensitive to multiple agents.[1-12]

The problem of bacterial strains resistant to antimicrobial agents has been especially great in hospitalized patients.[12] In individuals not having contact with a hospital comparatively few infections due to such resistant bacteria have been encountered. Hospitalized individuals not receiving antimicrobial therapy have a higher carrier rate of *Staphylococcus aureus* on dismissal than on admission, and among the organisms harbored by them there is increased incidence of strains not susceptible to various antimicrobial agents. Antibacterial agents appear to have produced, in patients and places, empty ecologic niches into which resistant strains have moved after sensitive ones have been eliminated. This seems especially likely in the case of so-called staphylococcus carriers among patients recently dismissed from hospitals.

"Hospital strains" of staphylococci resistant to multiple antimicrobial agents are most likely to cause outbreaks of infections in nurseries and among surgical patients. However, some nursery outbreaks have resulted in secondary infections in homes, with babies who have acquired infection in the hospital nursery transmitting it, on being brought home, to siblings, parents and other persons. Also mastitis may develop in the mother from a staphylococcal infection acquired from the baby. In order to control outbreaks of staphylococcal infection of this variety accurate information on the incidence of hospital-acquired infection, particularly among newborn infants, is necessary. Since babies often are discharged from the hospital within the first week after delivery, and since nursery-acquired staphylococcal infection may not be clinically manifest until the second or third week, accurate data on such postdismissal infections are essential.

In hospitals tetracycline-resistant strains of hemolytic streptococci also are common; their incidence in certain localities varies from 20 to 40 per cent. A potential hemolytic-streptococcus problem may be in the offing. In any event, it would be hazardous to rely on a tetracycline as prophylaxis against rheumatic fever in a person unable to accept penicillin.

Rational approach to the problem of bacterial resistance appears to involve (1) strict economy in prescribing all antimicrobial agents, and (2) prevention of cross-infection with resistant organisms, especially in the hospital environment, by means of aseptic and antiseptic techniques.

The Microbial Flora

Interference with the customary interrelationships of the various species of microörganisms constituting the normal microbial flora of man frequently follows administration of antimicrobial agents. The possibility of such iatrogenic suppression of certain species of the flora with emergence to predominance of other species makes knowledge of the microbial flora essential to proper application of antimicrobial therapy.

Microörganisms of the flora achieve a workable degree of equilibrium with the host, so that disease in the host due to these agents usually results only from a disturbance of this bilateral neutrality. Adaptation of both host and microorganism frees the participants of the constant insecurities of pathogenicity on the one hand and bacterial destruction on the other. Despite this working truce and the possibility that the flora may participate in activities favorable to man, one should not forget that the constituent microorganisms retain their potential to cause significant disease in the host.

Microbial composition of flora. These microörganisms indigenous to man may be composed of (1) the resident flora of relatively fixed type of commensal organisms, which if disturbed has a strong tendency to reëstablish itself, and (2) the transient flora reflective of the environment, which generally is of little significance if the resident flora is intact.

Possible functions of flora. The microbial flora may serve the host by aiding in the digestive process, synthesizing certain vitamins such as thiamine, riboflavin and nicotinic acid, and inducing the formation of antibodies, thereby protecting the host against infection by the constituent microörganisms. In man, circulating antibodies to members of his own bacterial flora may be related to the introduction of surface microörganisms into deeper tissues, and they may help protect the host against more massive invasion in the future. However, these microorganisms are not essential to the life of the host since "germ-free" animals lacking a microbial flora have been reared successfully.

Some endogenous infections. Indigenous microörganisms may participate in disease of the host, especially in the presence of certain predisposing conditions. Subacute bacterial endocarditis is usually an endogenous infection. Implantation of *Streptococcus mitis*, *Streptococcous faecalis*, or other microörganisms on a previously damaged or congenitally irregular cardiac valve may follow its introduction into the blood stream by surgical or other manipulation.[13, 14]

Actinomycosis caused by *Actinomyces israeli* may represent another example of endogenous infection. This may be found in the mouth, pharynx and intestine of man. Incidentally, distinction between the rough *Actinomyces israeli* isolated from man and the smooth *Actinomyces bovis* from cattle may be unwarranted, since both forms have been described in either host, and rough strains may become smooth after cultivation. The common sites of actinomycotic involvement, cervicofacial, thoracic and abdominal, are contiguous to the areas inhabited by the causative agent and further suggest endogenous infection. Dental extraction, injury to the mouth or throat, penetrating wounds of the intestinal tract, and other events have been associated with the pathogenesis of actinomycosis in man, but in many cases origin of the process remains undetermined.[15]

Serious infection, such as bacteremia, due to indigenous gram-negative enterobacilli most commonly is precipitated by surgical procedures or manipulation of the urinary or gastrointestinal tract. Diseases such as diabetes, cirrhosis, and blood dyscrasias, and therapeutic measures or agents such as irradiation, adrenal steroids, and antimetabolites, which alter host resistance, predispose the subject to such endogenous infection.[16-31]

The fusospirochetal diseases such as periodontal disease, ulceromembranous stomatitis or pharyngitis including noma and lung abscess are especially likely to occur when the host has an underlying process such as malnutrition, agranulocytosis, or viral infection.[32]

In addition to microörganisms of the flora being responsible for endogenous infection in the host, some members, and often transient ones, may be responsible for transmission of infections to others. As an example of this, the nasal carrier state, which may be relatively persistent or intermittent, may serve as a reservoir from which new clinical cases originate. Apparently one-third or more of persons can be nasal carriers of *H. influenzae*, one-quarter or more may carry *Diplococcus pneumoniae*, and up to one-fifth may carry *Streptococcus pyogenes*. Nasal carriers of *Klebsiella pneumoniae* appear to be of lesser incidence. The number of nasal carriers of pathogenic staphylococci appears to fluctuate considerably and may reflect environmental factors to a great extent. Of course, such transmission of infection is not limited to nasal carriers, and other routes include the pulmonary, genital and intestinal.

Superinfection

Genesis. Superinfection may reflect one of the following mechanisms:

1. In a patient with a mixed infection resistant bacteria, although present, are too few to be isolated regularly on culture, but with treatment and eradication of susceptible organisms the resistant strains become dominant.
2. In a patient receiving an antimicrobial agent that is influencing the growth of the normal bodily flora, overgrowth of those organisms not susceptible to the drug may occur, since their natural bacterial antagonists have been eliminated, and these endogenous bacteria may spread to the lungs, urinary tract, blood, and other places normally forbidden them (pneumonitis due to *E. coli* occurring during penicillin therapy).
3. In patients whose susceptibility to infection is reduced by other disease or whose microbial flora has been disturbed mechanically or by antimicrobial therapy exogenous organisms may spread from the environment or persons therein and take up determined habitat (staphylococcal enterocolitis).

Manifestations. Superinfections are manifested clinically and microbiologically by the appearance of new symptoms and findings, or the reappearance of those recently eliminated, in a patient at a time when the initial process appears to be responding to a given antimicrobial regimen. Such superimposed or secondary infections may appear in the original site of infection, or in sites unassociated with the original process. The intestinal tract, respiratory tree, urinary tract, and blood stream may be the sites of superinfection.

The phenomenon of superinfection due to antibiotic-induced changes in the bacterial flora may be noted as early as the fourth or fifth day after initiating therapy. Cessation of therapy responsible for a change in the bacterial flora is usually followed by a return to a normal flora within a period of days, but in certain patients having diseases characterized by lowered general resistance such may not occur for several weeks.

Staphylococcal superinfection. Staphylococcal enterocolitis frequently is fulminating and may cause death. In suspected cases an immediate diagnosis should be attempted by microscopic examination of the feces. If such examination shows many gram-positive cocci, therapy with antimicrobial agents that may have enhanced the development of this secondary condition should be discontinued if at all possible, and an antibiotic that is effective against staphylococci should be given, preferably by the oral route. In addition to enterocolitis, staphylococcal pneumonia and staphylococcal bacteremia may manifest exogenous or endogenous superinfection. In the staphylococcal cases the bacterial flora is most likely to be influenced in this direction by administration of sulfonamides, streptomycin, the tetracyclines, chloramphenicol, kanamycin and neomycin, which may eliminate the enterobacilli, the natural bacterial antagonists of staphylococci.

Enterobacillary superinfection. In a sense the contradistinct situation may occur on use of penicillin, erythromycin, novobiocin and so forth, which may depress the coccal members of the body flora and encourage the production of bacteremia, urinary infection, pneumonia, and the like by coli-aerogenes and allied organisms. By periodic examination of the sputum and stools one may be able to detect antimicrobial-induced changes in the body flora in time to avert clinical superinfection.

Predisposed patients and pathogens. In general, subjects most susceptible to superinfection appear to be infants, persons with pulmonary disease, patients having a defect in immunizing capacity, and those receiving a tetracycline or combined antimicrobial therapy.

Strains of staphylococci, yeasts, and enterobacilli appear to be the most commonly encountered organisms in systemic or visceral superinfections.

The significance of yeasts appearing in the oropharynx and intestines during treatment with antimicrobial agents is often obscure and may not result in a clinically identifiable syndrome. Rarely, however, serious complications may ensue, and diffuse infection, usually candidiasis, with involvement of the meninges, heart valves and other organs may result in death.

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Primary Malignant Tumors of the Ovary

A Study of 59 Cases at Columbia Hospital for Women, Washington

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THE OVARIAN MALIGNANT NEOPLASM ranks third among the group of female pelvic malignancies.[1] The survival rate of patients with primary ovarian malignant tumor has not been increased much in recent years because of the insidious onset of the condition and the lack of definite early warning signs.[2] When the patients seek medical attention the disease is already advanced beyond the curable state in more than half the cases.[3] Despite professional efforts and changing therapeutic procedures, appreciable progress in solving these problems has not been made as much as with cervical or endometrial carcinoma.

Material and Method

From January 1950 through December 1961 a total of 59 patients with primary ovarian tumors have received some type of treatment at Columbia Hospital for Women. Excluded were 4 cases of ovarian carcinoma which were metastatic from breast carcinoma. Also excluded was a case of Krukenberg tumor of the ovary which was found 12 months after radical mastectomy for carcinoma. Included was a case of adeno-acanthoma of the ovary with no evidence of direct relation to the endometrium. An attempt was made to stage all cases from the hospital records according to the Helsel grouping[4] from 1 to 4. In the tabulation of present survivors, the patients who did not return to their private physicians for care or to the clinic for more than 6 months from the last appointment were included in the 'lost to follow' group.

Results

Cystic or Solid Neoplasm Group

There were 48 patients in this group. Among them, 37 patients had cystic neoplasms and the remainder solid neoplasms according to the pathologic diagnosis. The classification of types of tumors is shown in table 1. The usual preoperative diagnosis was either ovarian mass or pelvic mass, and the malignant nature was not suspected unless the disease had advanced to an almost inoperative stage. During the laparotomy, however, the malignant nature was strongly suspected in 43 cases. Nine of the 48 patients had a previous operation for various benign pelvic conditions. One of the 9 patients had a hysterectomy 6 years previously with the preoperative diagnosis of endometrial carcinoma and subsequently developed ovarian carcinoma in 1 of the retained ovaries. In 5 of the 9 patients surgery was done at or after the age of 40 years.

TABLE 1: Classification of Cystic and Solid Neoplasms

	No.	Per cent
Cystic:		
Serous cystadenocarcinoma	25	42.3
Papillary serous cystadenocarcinoma	9	15.4
Pseudomucinous cystadenocarcinoma	1	1.7
Papillary cystic adenocarcinoma	1	1.7
Cystic adenocarcinoma	1	1.7
Solid:		
Adenocarcinoma	7	11.8
Papillary adenocarcinoma	1	1.7
Anaplastic carcinoma	1	1.7
Adeno-acanthoma	1	1.7
Ovarian sarcoma	1	1.7
Total	48	

Among the various symptoms presented by the patients 54 per cent consisted of abdominal swelling with various degrees of pain or discomfort and rapid weight gain. Surprisingly, 17 per cent had irregular vaginal bleeding as the sole symptom, irrespective of menopause. In 5 of the

48 patients surgery was advised after pelvic examination and in the absence of symptoms. There were 4 patients who had 2 different primary neoplasms. In 2 of them 2 types of malignant lesions were found in the same surgical specimens, and in the others ovarian carcinoma had developed 5 and 6 years, respectively, from the time of previous surgery elsewhere for other malignant tumors.

Sixty-four per cent were between 40 and 60 years of age. The youngest was 17 years old and the oldest 72 years of age.

Twenty-six patients, or 60.3 per cent, were nulligravida, and 17, or 35.4 per cent, were premenopausal. Ovarian malignant tumors in 3 patients were strongly suspected because of the persistence of abnormal cells in the face of negative pathologic findings from uterine curettings and cervical biopsy.

The average duration of symptoms before hospitalization varied from less than 1 month to more than 6 months. Eighteen patients sought medical attention within 1 month, 19 between 1 month and 6 months, and 3 later than 6 months. It is difficult to calculate a definite figure for survival rate because the number of cases is small and many were lost to follow-up. Nonetheless, these are tabulated in table 2 for the purpose of presentation.

TABLE 2: Survivors According to Clinical Grouping in Cystic or Solid Neoplasm Group

	Group 1	Group 2	Group 3	Group 4	Total	Per cent
Number	14	4	12	18	48	
10 or more years	0	0	1	0	1	3.1
3 years	1	1	0	1	3	9.4
2 years	5	1	1	0	7	21.5
Lost to follow-up	6	1	2	7	16	

There were 2 unusual cases of ovarian carcinoma:

Case 1. A 17-year-old unmarried Negro woman entered the Hospital with severe abdominal pain of several weeks' duration. On pelvic examination the left ovary was found to be enlarged approximately 10 cm. in diameter with considerable tenderness. Left oöphorectomy was done without unusual incident, and the patient was discharged from the Hospital after uneventful postoperative recovery. The postoperative diagnosis was pseudomucinous cystadenoma. The patient returned to the hospital 3 months later when she became ill again, and an irregularly defined mass occupying the entire lower abdomen was found. She underwent surgery again, at which time an ovarian tumor with extensive metastasis was found and only a biopsy could be done. The diagnosis of the biopsy specimen was anaplastic carcinoma of the ovary.

Case 2. A 28-year-old married white woman with her first pregnancy at 36 weeks' gestation was admitted to the Hospital with lower abdominal pain of 4 days' duration. After careful evaluation of physical findings the diagnosis of twisted ovarian cyst was made and left oöphorectomy performed. During surgery a malignant lesion was not suspected, but adenocarcinoma was found pathologically. The patient delivered a normal infant vaginally at term. At 6 weeks postpartum a total hysterectomy and right salpingo-oöphorectomy were done. Despite this, the patient died a year later.

Dysontogenetic Neoplasm Group

Excluding a case of dysgerminoma from 11 patients in this group, the main symptom was irregular genital bleeding in all, with varying durations ranging from 2 months to 2 years. All tumors were classified as group 1. The various types of tumors in this group are presented in table 3 according to the pathologic diagnosis.

TABLE 3: Classification of Dysontogenetic Neoplasms

	No.	Per cent
Granulosa-cell	7	11.8
Theca-cell	3	5.0
Dysgerminoma	1	1.7
	—	
Total	11	

The patient with dysgerminoma had an ovarian tumor of approximately 6 months' gestational size, but metastasis was not found during surgery. The patients were between 26 to 43 years of age. In 1 patient with endometrial carcinoma a granulosa-cell carcinoma was found. In 4 patients the ovarian tumor was not diagnosed preoperatively, and primary indications for surgery were for other benign pelvic conditions. Among the 6 patients followed 5 are alive without any evidence of recurrence for 2 to 6 years from the time of surgery.

Discussion

The incidence of ovarian carcinoma among all cancers has been reported as 4.9 per cent in New York State and 5.7 per cent in Connecticut.[1] The probability of women developing ovarian carcinoma in their lives is reported to be 0.9 per cent.[5] When the ovarian mass was first recognized in women over 50 years of age 60 per cent were found to be malignant.[5] There have been many different opinions expressed in the literature whether one should remove ovaries prophylactically at the time of pelvic surgery for benign conditions in women over 40 or 45 years of age or in the postmenopausal period. Some authors[6-12] favor their removal, and other authors[13,14] do not. The calculated risk of the eventual development of a malignant neoplasm in the preserved ovary for a woman over 45 or 50 years of age is 8 out of 1,000; another 6 out of 1,000 will develop benign tumors.[15] Of women whose ovaries have been preserved, however, 5.2 per cent will undergo subsequent surgery for ovarian lesions.[16] Cianfrani[17] reported 7 malignant neoplasms after examining 1,500 apparently grossly normal ovaries. Despite the above figures and calculations, it is not thought that prophylactic oöphorectomy should be done when the ovaries appear normal in premenopausal women, since pelvic surgery does not impair ovarian function,[18] which lasts long after the menopause, as evidenced by vaginal smear study.[19]

Adequate follow-up with periodic examinations and aggressive approach to any subsequently developing pelvic mass can never be neglected.

The first report of a case that was diagnosed by vaginal smear study was made by Frech[20] in 1949. Since then, several others[21, 22, 23] have reported similar cases. There were 3 such cases in this series. Therefore, one should not be reluctant to consider this possibility when the curettings and cervical biopsies are negative despite the finding of abnormal cells. It is important that all surgeons become familiar with the gross characteristics of the various ovarian tumors, and surgical specimens should be examined in the operating room with frequent consultation with the pathologist regarding the nature of tumors removed. The malignant ovarian tumors are not necessarily large, and careful evaluation before completion of the surgery is the only way to prevent inadequate surgery in cases of early stages or subclinical ovarian carcinoma.

Summary

Fifty-nine cases of primary ovarian malignant neoplasms at Columbia Hospital for Women were found during a 12-year period. Forty-eight were cystic or solid neoplasms, and 11 were dysontogenetic.

Two unusual cases of ovarian malignant tumors were seen and have been described.

The incidence of inadequate surgery can be reduced if all surgical specimens are examined in the operating room in consultation with the pathologist before completion of the surgery.

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Cystic Fibrosis of the Pancreas in a Young Adult*

Report of the Case of a Fourteen-year-old Boy with Pulmonary Manifestations and Subsequent Exploratory Thoracotomy

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CYSTIC FIBROSIS OF THE PANCREAS was first described in 1936 by Fanconi[1] who reported the association of pancreatic insufficiency with bronchiectasis. The syndrome was recognized as a definite pediatric entity with separate descriptions of the disease in necropsied cases in 1938 by Andersen,[2] Blackfan and May,[3] and Harper.[4] Although innumerable cases in children have been presented since that time, it has only recently become of concern in adult medicine.[5-9]

The purpose of this report is to present a case of cystic fibrosis of the pancreas in a young adult. We also wish to emphasize some difficulties in the diagnosis of this disease and to urge a diligent and careful study for cystic fibrosis in all patients, young or adult, with chronic pulmonary disease for which no apparent etiology is ascertained.

Report of Case

M. H., a 14-year-old boy, was admitted to Glenn Dale Hospital for the first time on February 6, 1959 for evaluation of a persistent productive cough and an abnormal chest roentgenogram. An adequate history relative to the patient's childhood was not obtained from the mother, who was a very poor historian. The present location of the father is not known. The only history of note as taken from the patient was that he was once told by his mother that he was "born with pneumonia." Physical examination showed an underdeveloped, poorly nourished, white boy, complaining of a cough productive of light greenish sputum. Roentgenographic examination of his chest showed bilateral patchy infiltration in the lung fields with multiple scattered calcified densities, especially in the right lung field. The white blood cell count was 11,100 per cu. mm., with 71 per cent polymorphonuclear leukocytes, 25 per cent lymphocytes, and 4 per cent eosinophils; the urinalysis and the serologic test for syphilis were negative. The intermediate strength PPD and skin tests using coccidioidin and histoplasmin as antigens were negative on 2 occasions, as was the serum complement-fixation test for fungi. The second strength PPD was reported as 1+ positive. Sputum studies for acid-fast bacilli and fungi were negative. Pyogenic examinations of the sputum were not revealing. The patient refused gastric aspirations. His initial workup otherwise included bronchoscopy (showing thick mucus with normal bacterial flora by culture), bronchogram (negative), and scalene node biopsy (nondiagnostic).

The clinical course was characterized by repeated episodes of coughing productive of white sputum, and serial chest roentgenograms showed repeated migratory areas of infiltration (figure 1). The boy's response to antibiotics during these episodes was characterized by clinical improvement and clearing of the lungs as shown by serial X-ray films. Blood eosinophil determinations showed varied results with differential counts ranging from 4 to 13 per cent. Stool examinations were negative for ova and parasites. On May 6, 1959 left thoracotomy with resection of the lingula segment was performed. At this time several fluid-filled cavities suggestive of abscesses were noted. A pathologic specimen was interpreted microscopically as showing "chronic nonspecific bronchitis with pulmonary cavitation of unknown etiology." Examination of the contents of the abscesses for acid-fast bacilli, pyogens and fungi was negative. Serial chest roentgenograms continued to show migratory areas of infiltration, and the boy was placed on continuous broad-spectrum antibiotic therapy and prophylactic isoniazid. Serial chest X-ray films thereafter showed progressive improvement, and he was discharged to the Outpatient Chest Clinic on July 5, 1959 for follow-up with a recommendation for continued antibiotic therapy.

The patient was readmitted to this Hospital on December 30, 1960. At this time he was 16 years of age. Review of his clinical follow-up between admissions showed that he had a poor Clinic attendance record, had taken antibiotics sporadically, and had experienced repeated pulmonary infections. It was reported that he

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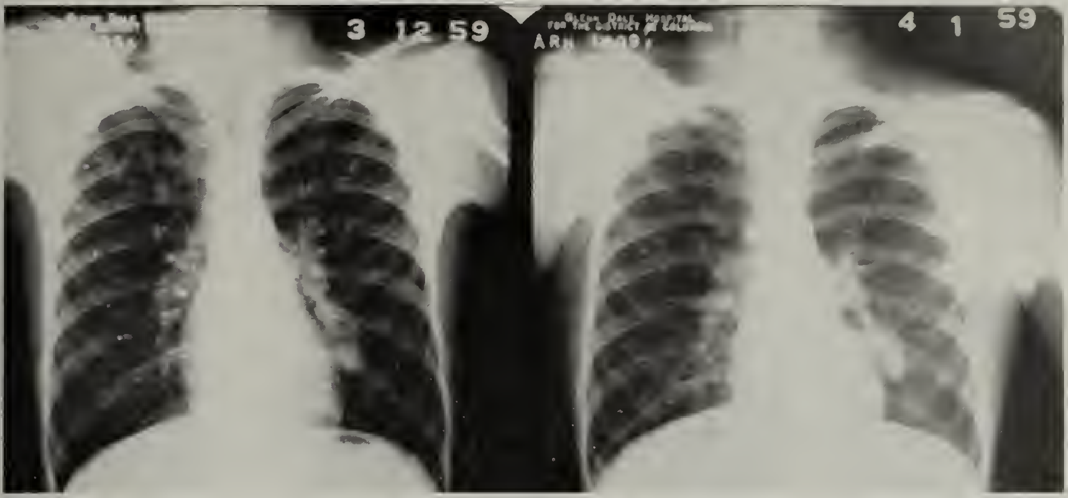

FIG. 1. Left, scattered infiltrations in both lung fields. Dense infiltration in the hilar areas and left paracardiac region. Right, much clearing after antibiotic therapy

was seen in the Chest Clinic only when he had exacerbations of his pulmonary infections. He had a poor school attendance record because of this disability and at the age of 16 years was only in the seventh grade.

On this admission the patient was observed to be thin but fairly well-developed and well-nourished. A chronic cough was present and there was a nasal twang to his voice. In spite of his pulmonary disability he was quite active and his appetite was good. Physical examination of the lung fields was essentially negative. Funduscopic examination showed normal eyegrounds. Roentgenographic examination of the chest showed an infiltrative process in the right mid-lung field. The white blood cells numbered 10,100 with 77 per cent polymorphonuclear leukocytes, 22 per cent lymphocytes, and 1 per cent eosinophils. The urinalysis was negative. Total proteins and the A/G ratio were normal, as was an electrophoretic pattern of the serum proteins. Serum amylase and serum electrolytes were within normal limits. PPD intermediate strength and skin tests with histoplasmin, blastomycin and coccidioidin were negative, as were serum complement-fixation tests for fungi. Bronchoscopy showed pus exuding from several orifices of the right upper and middle lobes. Cultures of this material were reported as negative for acid-fast bacilli, pyogens and fungi. A left bronchogram was inadequate due to poor coöperation of the patient. The right bronchogram showed poor filling of the right lower lobe. Esophagram with the use of Dionosil® was negative. Sputum studies for eosinophils, acid-fast bacilli and fungi were also negative. Roentgenographic examination of the sinuses showed absence of the right frontal sinus, right and left maxillary sinusitis, and questionable sphenoid sinusitis. Study of the stool for ova and parasites was negative, and fat and meat fibers studies were not seen. Repeated sputum studies at this time showed mostly alpha streptococci and coagulase-negative *Staphylococcus aureus*. Blood cultures were negative. During this interval he was not maintained on antibiotics and serial X-ray films showed repeated areas of infiltration. The areas of infiltration cleared well on reinstitution of antibiotic therapy (figure 2). A sweat test as outlined by Shwachman and Leuber[10] was performed on April 17, 1961. The sodium content of the sweat was found to be 87 mEq./liter (value above 60 mEq./liter considered diagnostic for cystic fibrosis). Test for sweat chlorides as suggested by Shwachman and Gahm[11] was done and was positive (3+), while the control was negative (figure 3, table 1). The diagnosis of cystic fibrosis of the pancreas was considered conclusive at this point.

TABLE 1: Comparison of Reaction from Patient and Control with the Use of Hand Print on Agar Plate with Silver Nitrate and Potassium Chromate

	Patient	Control
Before washing hands	+++	Negative
5 minutes after washing hands	Negative	Negative
10 minutes after washing hands	+	Negative
15 minutes after washing hands	+++	Negative
20 minutes after washing hands	+++	Negative

Because of the unusual nature of this case, sections from the paraffin blocks of the previous lingulectomy were reviewed at the Armed Forces Institute of Pathology. The report was that the sections showed chronic bronchitis (asthmatic type) with bronchiectasis, focal chronic pneumonitis, and probably the wall of an old abscess cavity. The patient was put on continuous antibiotic therapy with change of antibiotics at monthly intervals, and under this regimen he remained clinically asymptomatic and his X-ray films remained stable. Because of the reported complication of pulmonary insufficiency,[9] base-line pulmonary function studies were performed. These studies showed a vital capacity of 2.3 liters, 60 per cent of normal, with a timed vital capacity of 85 per cent in 1 second, 92 per cent in 2 seconds, and 100 per cent in 3 seconds. Arterial gas analysis showed a pH of 7.25 with a bicarbonate of 26 mEq. and pCO_2 of 63 mm. Hg. The patient was discharged to the Outpatient Chest Clinic with the recommendation of continuous antibiotic therapy with monthly changes.

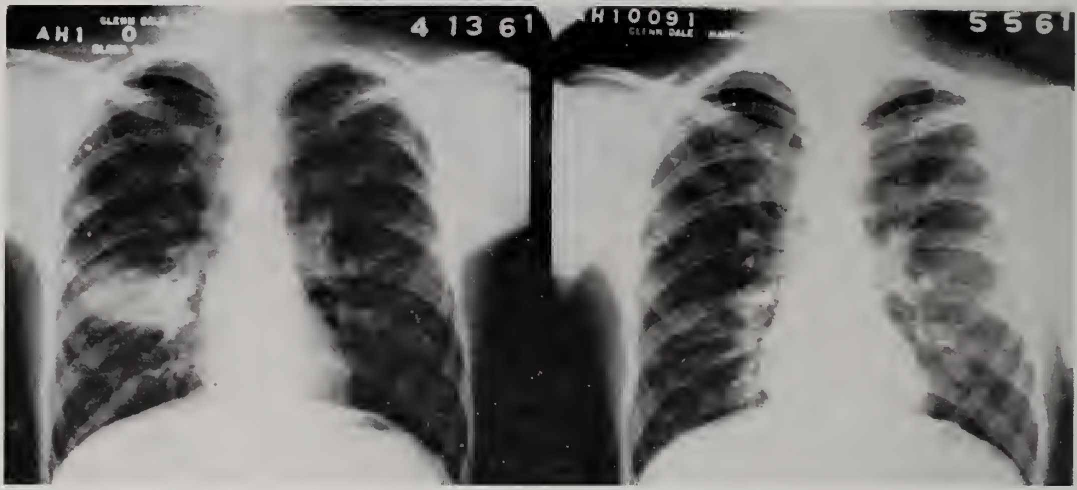

FIG. 2. Second hospitalization (after left thoracotomy). Left, dense infiltration primarily in right midlung field. Right, clearing of right midlung field after 3 weeks of antibiotic therapy.

Discussion

Cystic fibrosis of the pancreas is recognized as a disease of hereditary disposition, the clinical manifestations of which are attributable to a widespread dysfunction of the exocrine glands, chiefly of the lungs, pancreas, and skin. The diagnosis is usually based on several clinical and laboratory criteria, the principal ones being its hereditary disposition (characterized by a history of the symptoms in other family members, usually siblings), repeated pulmonary infections, abnormalities in sweat electrolytes, and pancreatic insufficiency. The association of cirrhosis of the liver and sinusitis,[8, 9] as well as signs of vitamin deficiencies,[10] and eyeground changes[12] have been mentioned. It is generally agreed that the basic defect is genetically determined, and most of the studies have suggested that it is transmitted as an autosomal recessive character. Some evidence suggests that the heterozygous state may give rise to some manifestations and that the gene may be more widespread than previously appreciated.

It is known that the diagnosis is not limited to those patients with all of the manifestations of the syndrome but that gradations in its systemic involvement occur, this being especially true in some adult patients. This fact assumes added importance in view of the relationship of cystic fibrosis of the pancreas to chronic pulmonary disease.

Pulmonary involvement is an almost constant feature of cystic fibrosis of the pancreas, occurring in over 90 per cent of the patients with this disease. The clinical picture may be characterized by bronchiectasis, recurrent pneumonia, asthma, simulation of pulmonary tuberculosis, and other pulmonary infiltrations, or chronic pulmonary insufficiency.[9] Pulmonary involvement may occur in the absence of evidence of pancreatic disease. There are disturbances in pulmonary function, and often the end-stage may be one of cardiopulmonary involvement due to obstructive emphysema, fibrosis, or bronchiectasis with right-heart failure.

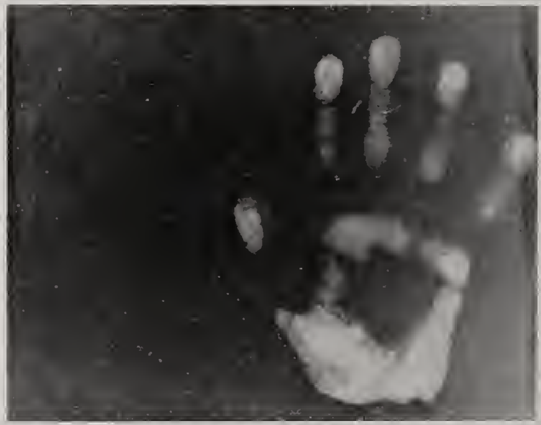

FIG. 3. Agar plate with silver nitrate and potassium chromate (after Shwachman and Gahm). The patient's hand print is on the right. A control hand print evokes no reaction on the left.

In cases in which surgery has been performed the gross appearance of the lung tissue has shown classic suppuration grossly and emphysema, and sometimes areas of atelectasis. There is usually involvement of the finer bronchioles microscopically with dilatation and clogging of the lumen with mucus, and the walls may be infiltrated with lymphocytes and eosinophils. The gross and microscopic appearances have been described in considerable detail by Kulczycki et al.[13]

Summary

The case of a 14-year-old boy (now 17 years old) with widespread migratory pulmonary involvement has been presented in whom the diagnosis of cystic fibrosis of the pancreas was confirmed by the use of the sweat test and the chloride plate test. The patient presented a considerable diagnostic challenge initially and, unfortunately, the correct diagnosis was not seriously considered until the second hospitalization. Many diagnostic and investigative procedures were undertaken, including an exploratory thoracotomy with resection which was not diagnostic.

Cystic fibrosis should be considered in patients with migratory pulmonary infiltrations who fail to respond satisfactorily to proper antibiotic therapy. Institutions which deal primarily in chronic pulmonary diseases should maintain an awareness of this disease in patients in whom no clear-cut etiologic agent is demonstrated. All pulmonary infiltrations for which no obvious etiology is readily ascertained should be studied by the simple sweat tests. Materials for these tests are relatively inexpensive and are easily available. Recourse to these tests may prevent long or repeated hospitalizations for extensive diagnostic purposes.

N.B. We are indebted to Miss Margaret Windle for her invaluable stenographic aid, to the Laboratory Section for its technical help, and to the Radiologic Section for the photographs.

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Extension of Medicare Program

Provision for Medical Care to Dependents of Members of the Military Forces of NATO Countries

1. On and after July 1, 1963 the accompanying dependents of active duty military personnel, who are members of the land, sea and air forces of North Atlantic Treaty Organization countries stationed or passing through this country, will be entitled to the same care under the Medicare Program as those dependents of members of the uniformed services.

2. The standard Identification Form DD Form 1173 will be furnished to those dependents, and all contractual provisions and criteria as to scope of care and eligibility will be the same as for dependents of members of our uniformed services.

3. In the coding of Appendix A, the branch of service code and grade of the NATO member will bear the same number as our corresponding branch of service code and grade. For purposes of identification of dependents of NATO members, programming, and budget actions by this office, place an "X" or "11" overpunch in column 17.

4. When NATO claims (DA Forms 1863) are transmitted to this office along with the routine submission of the voucher, claims and cards should be segregated and earmarked.

5. This provision becomes effective July 1, 1963 and will be implemented by formal contract modification.

6. Contractors are requested to announce this change in the Dependents' Medical Care Program through their periodic publications.

Brig. General Bryan C. T. Fenton,
MC, USA
Executive Director, Office for Dependents Medical Care

Carcinoma of the Pancreas

Review and Report of a Case with Relenting Jaundice

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CARCINOMA OF THE PANCREAS is not a common disease. It comprises about 4 per cent of all cancers and is found in 0.3 to 0.75 per cent of autopsies.[1] It is estimated that 1 to 2 per cent of deaths in this country are due to carcinoma of the pancreas.[2] Its incidence is about 0.1 per cent of all patients admitted to a large general hospital.[1]

Carcinoma of the pancreas occurs most commonly from the fifth to the seventh decades, with an average age in the mid-fifties. A number of cases under age 20 have been reported, the youngest being in an infant of 7 months.[3] In Nightingale and co-workers' study[4] of 100 cases, 4 were over 80 years old and the youngest was 25. There were 65 males and 35 females. The usual sex incidence is about 2 or 3 to 1, males predominating over females. The disease is about twice as common in whites as in Negroes.[2]

The endocrine secretion from the pancreas amounts to about 1,500 ml. per day. It contains mainly water, bicarbonate (60–120 mEq. per liter), sodium (140 mEq. per liter), potassium (4 mEq. per liter), and a rich source of hydrolytic enzymes, which include proteinases, nucleases, amylases and lipases. These are capable of degrading proteins, lipids, starch and nucleic acids. The main digestive enzymes are trypsin, amylase (or diastase), and lipase. Deviation of these enzymes from the intestine causes a fecal loss of about one-half the fat and 30 per cent of the protein ingested. Carbohydrate is digested poorly, but hydrolysis by intestinal enzymes and bacteria prevents its loss in the feces.[5, 6]

Pathologic Features

A number of conditions have been considered by some to predispose to development of carcinoma of the pancreas. These include developmental errors, occurrence of aberrant pancreatic tissue, chronic pancreatitis, chronic cholecystitis, alcoholism, trauma, and diabetes mellitus.[1, 3, 4] Berk[1] found a history of long-standing diabetes mellitus in 7 per cent of patients with carcinoma of the pancreas. Marble's statistics[7] show that the pancreas is the most common site of carcinoma in diabetics. In Nightingale's study[4] of 100 cases of carcinoma of the pancreas 6 had a history of diabetes. Bell[8] in his large series could not draw any conclusion as to pancreatic carcinoma being more frequent in diabetics. However, it is his belief that a much larger proportion of the cancers which occur in diabetics are pancreatic in comparison to the number of pancreatic cancers occurring in the general population.

About 70 per cent of carcinomas of the pancreas are located in the head of the pancreas, from 10 to 25 per cent originate in the body or tail, and a variable number have so diffusely infiltrated in all parts of the pancreas that the primary site cannot be determined. There are various modes of spread of these neoplasms. Direct extension to neighboring structures, such as the stomach, duodenum and colon, is more common in lesions of the head of the pancreas. Spread may occur by way of lymphatics to gastric, hepatic, celiac, mesenteric, periaortic, mediastinal, peribronchial, and even occasionally to supraclavicular nodes. More distant metastases via blood channels to the liver and any organ of the body can occur. Spread may occur via nerve sheaths, giving rise to pain.[4]

Clinical Manifestations

The classical concepts of 2 supposedly different syndromes, lesions of the head characterized by painless jaundice and lesions of the body and tail characterized by severe pain without jaundice, often cause mistaken diagnoses and delay further diagnostic and therapeutic procedures. Whipple[9] has stated, "To observe the patient for weeks until the diagnosis is obvious is to study the patient to death."

The following is a list of the most common symptoms of carcinoma of the pancreas found in reviewing over 700 cases in the literature.[4, 10-16]

They are listed in order of frequency: weight loss, pain, jaundice, fatigue and weakness, anorexia, nausea and vomiting, constipation, diarrhea, peripheral venous or arterial thrombosis, psychiatric symptoms, pruritis, and gastrointestinal hemorrhage.

In the majority of cases symptoms have been present for only a few months before the patient consults a physician. Only occasionally has the duration of symptoms been longer than a year.

Pain is the cardinal symptom of carcinoma of the pancreas. It is the chief complaint in over 50 per cent of cases. It is caused by invasion of nerve sheaths and ganglia and by obstruction of the pancreatic or biliary ducts.[4] The pain is usually gradual in onset, is often described as a dull ache in the epigastrium, and extends to either or both upper quadrants. It is commonly referred through to the back at a corresponding level and on occasion may extend to the lower abdomen. Early, the pain may be intermittent and may be helped by salicylates. As the weeks pass the pain becomes more severe and more persistent and harder to relieve with medication. The pain frequently wakes the patient from sleep, and he may find partial relief by flexing his trunk and pulling his knees up to his chest or by leaning forward with arms folded across the abdomen. The pain may be increased by exertion, defecation, deep breathing or eating. Severe attacks of pain such as occur in biliary colic due to stone are infrequent.[17]

The location, radiation and character of the pain are variable. In the series of Nightingale and co-workers[4] of 100 cases it was located in the epigastrium in 36 per cent, the right upper quadrant in 16 per cent, the upper abdomen in 11 per cent, the chest in 5 per cent, the lower abdomen in 2 per cent, generalized over the abdomen in 1 per cent, and scapular in 1 per cent. The pain is usually described as dull and steady or colicky, but occasionally it may be paroxysmal.

Jaundice is the next most important symptom in carcinoma of the pancreas. It is an initial symptom in 20 to 40 per cent of cases. Jaundice occurs in over 70 per cent of patients with carcinoma of the head of the pancreas and in about 25 per cent of carcinomas of the body or tail of the pancreas. Painless jaundice is present in only about one-fourth of the cases. Jaundice is not seen at any time in about 20 per cent of patients with carcinoma of the head of the pancreas. Pruritus occurs early in about 12 per cent of cases.

Weight loss is present in from 80 to 100 per cent of cases. It may be mild to severe, averaging 20 to 25 pounds in most series. Fatigue and weakness are very common symptoms, occurring in about 60 per cent of cases. Anorexia is also present in about this percentage. Anorexia, weight loss and weakness usually are prominent and progressive symptoms and often occur early. Nausea and vomiting occur in about one-third of cases. Constipation or diarrhea occur in about 10 per cent of cases. Infrequently the stools are large, bulky and fatty, suggesting an external pancreatic insufficiency. There may be ulceration of the duodenum or stomach with hematemesis or melena. This is uncommon, occurring in about 3 per cent of cases. An ulcerogenic tumor of the pancreas (Zollinger-Ellison syndrome) causing peptic ulceration may be malignant.[18]

In a small number of patients peripheral venous or arterial thrombosis may be the first indication of the presence of carcinoma of the pancreas. Thrombophlebitis may occur with or without pulmonary embolism. Vascular thrombosis has been reported in from 5 to 30 per cent of cases. Most commonly the leg veins have been involved, but arterial thrombosis has been reported. An initial thrombophlebitis occurred in only 9 of Bell's 609 necropsy cases of carcinoma of the pancreas.[19] There was no relationship of the thrombophlebitis to location of the tumor in the pancreas. However, others have found the incidence of venous thrombosis to be much higher in carcinoma of the body and tail than in carcinoma of the head. Lafler and Hinerman[20] studied 106 cases of carcinoma of the pancreas at necropsy and found 24 per cent to have multiple thrombi, that is, 2 or more venous or arterial thromboses with or without pulmonary emboli. The incidence of multiple thrombi in lesions of the head was 14 per cent, in lesions of the body 26 per cent, and in lesions of the tail 43 per cent. In Birnbaum and Kleeberg's study[12] of 84 cases of carcinoma of the pancreas at necropsy they found the incidence of thrombo-embolic complications to be 2½ times higher in carcinoma of the body and tail than in those of the head.

Vascular thrombosis occurs in cases of other malignant tumors but less frequently. Also, thrombo-embolic phenomena may occur in metastases of other cancers to the pancreas. One possible explanation is that trypsin is released from the body and tail of the pancreas. Trypsin under certain conditions is known to have thromboplastic activity and may be the agent responsible for the frequent occurrence of thrombosis in carcinoma of the pancreas.[12] Thus, one would expect thromboses to be more common in lesions involving the body and tail. Tumors in the body or tail and also in the head of the pancreas may cause an inflammatory reaction with release of trypsin.

Psychiatric disturbances have been reported in from 5 to 10 per cent of patients with carcinoma of the pancreas. Most commonly these disturbances are in the nature of a depression, but anxiety and agitation have been noted.

Physical findings. The physical examination usually reveals a somewhat weakened patient, with evidence of weight loss and a moderate to deep jaundice. Jaundice is present in a great majority of patients with carcinoma of the head of the pancreas but only one-fourth of those with lesions of the body and tail. Once jaundice is present it is almost always constant and usually progressive. The liver is enlarged in the majority of patients. The hepatomegaly may be due to obstruction of the common bile duct, metastatic lesions, portal vein thrombosis, or fatty infiltration. Cattell and Warren[21] made the important observation that nodularity of the liver may be due to cystic dilatation of the intrahepatic ducts and that a nodular liver in itself is not a contraindication to surgery.

An upper abdominal mass is palpable in about 30 per cent of cases. This may represent the primary tumor or metastatic lesions to areas such as the stomach. The gallbladder is palpable in about 15 per cent of patients without jaundice and in 30 to 50 per cent of patients with jaundice. In some series the incidence of a palpable gallbladder in patients with jaundice is much lower, indicating that Courvoisier's law may have limited application in this disease. However, necropsy studies usually show that the gallbladder is distended in a much higher percentage of cases than is clinically detected.

Ascites is present in from 10 to 20 per cent of cases and is usually due to peritoneal seeding. A palpable spleen is infrequent, and its incidence is greatest in carcinoma of the body and tail of the pancreas. Rectal examination may reveal implants in the pelvis.

Laboratory findings. A mild to severe anemia may be present. About 20 per cent of patients have occult blood in their stools. This is more commonly present in patients with carcinoma of the papilla of Vater. Leukocytosis is frequently present. In some patients this may be associated with thrombosis or metastasis. White blood cell counts as high as 106,000 per cu.mm. have been reported.[12] A high sedimentation rate is common. From 40 to 60 per cent of patients with carcinoma of the pancreas have either glycosuria, an elevated blood sugar, or an impaired glucose tolerance test. This impairment of carbohydrate metabolism is found in either lesions of the head or of the body and tail. In a small percentage of patients diabetes mellitus may precede the onset of symptoms by several months to a number of years. In a study of carcinoma of the pancreas and biliary tract Raskin and co-workers[2] state that 32 per cent of patients with diabetes and malignancy have carcinoma of the pancreas.

In a majority of patients jaundice is present. The jaundice is generally due to complete obstruction of the lower part of the common bile duct, and frequently high levels of direct reacting serum bilirubin are present. The jaundice is progressive, intense, and almost always unremitting. Occasionally in carcinoma of the ampulla of Vater fluctuations in the serum bilirubin occur which are believed to be due to sloughing of necrotic tissue. As stated previously, jaundice is frequently absent in carcinoma of the body and tail of the pancreas. Urobilinogen is virtually absent from the stools, giving evidence of complete obstruction to the flow of bile which is characteristic of the disease. Also, examination of the stool may show incomplete fat and protein digestion.

The thymol turbidity and cephalin cholesterol flocculation tests are almost always normal. Hypoproteinemia with reversal of the albumin globulin ratio may occur. This may be due to decreased digestion and absorption of ingested protein, loss of protein in ascites and edematous tissue, hemorrhage, liver dysfunction, and priority for protein that rapidly growing malignant tumors possess.[3] The alkaline phosphatase is elevated in almost all patients with jaundice and many patients without jaundice. It is frequently elevated in the presence of liver metastases. An elevated alkaline phosphatase may be the first sign of biliary tract obstruction occurring even before an elevated serum bilirubin.

Determinations of the serum amylase and lipase are not much help in diagnosis of carcinoma of the pancreas. They are frequently normal or may be elevated or decreased in this disease. The serum proteolytic enzyme activity has been measured and found to be of no help in diagnosis.[22] Recently much has been written of the elevation of serum leucine aminopeptidase in extrahepatic biliary obstruction. This enzyme is present in the pancreas in low concentration. Nikklia and Forsius[23] studied this enzyme in

270 cases of pancreatic, biliary tract and liver disease. They found that the serum leucine aminopeptidase had little value in differentiating between benign and malignant obstructive jaundice and was no better than the alkaline phosphatase determination in providing evidence of the presence or absence of liver metastasis. The serum glutamic oxalacetic transaminase is usually moderately elevated in biliary tract obstruction but is not too helpful in differential diagnosis. The prothrombin time is frequently abnormal in patients with jaundice or hepatic metastases.

Probably the best laboratory method available for the early diagnosis of carcinoma of the pancreas is direct studies of external pancreatic secretion with cytologic examination by intubation of the duodenum.[2, 24, 25, 26] The duodenum is intubated with a double lumen tube separating gastric from duodenal content. Intravenous secretin has been found to be an excellent stimulus of pancreatic secretion. Following secretin stimulation the pancreatic drainage is collected for 1 hour. The volume normally exceeds 1.7 ml. per Kg. of body weight. The bicarbonate concentration is 70 to 90 mg. per liter or more in at least 1 of the samples.[25] In patients with carcinoma of the pancreas the volume is decreased, the bicarbonate concentration usually is normal, and the cytologic examination of the fluid is usually positive. When the tumor is extensive the volume and bicarbonate concentration both may be reduced. In chronic pancreatitis the volume is usually normal, the bicarbonate concentration is reduced, and the cytologic examination is negative.[2, 24, 25, 26] Goldenberg and co-workers[25] found these tests positive in 4 of 5 cases of proven pancreatic carcinoma. Wenger and Raskin[26] found positive cytologic studies in 65 per cent and an abnormality of volume or bicarbonate concentration in 75 per cent of proven pancreatic malignancies. The volume of pancreatic secretion may be normal in cases of carcinoma of the head of the pancreas or when a small tumor is present and there is enough functioning pancreatic tissue to maintain a normal volume. The addition of pancreozymin to the secretin test may give additional information about gallbladder contraction but otherwise has not been particularly helpful. Unfortunately the determination of external pancreatic secretion and cytologic studies are difficult to perform and unavailable in many medical institutions.

Urinary lipase has been measured after secretin stimulation and in normal persons has been found to rise in 2 hours, with the highest rise in 6 to 8 hours. Weinstein[9] reports performing this test on 6 patients with proven carcinoma of the pancreas. All 6 showed an abnormal response with no rise after secretin stimulation. Recently the intravenous tolbutamide test has been studied in patients with carcinoma of the pancreas.[27] This test is probably no more sensitive than the oral glucose tolerance test in detecting an early disturbance in carbohydrate metabolism.

Roentgenographic findings. The most common procedure done is the roentgenographic examination of the upper gastrointestinal tract. About 50 per cent of patients with carcinoma of the pancreas will have demonstrable abnormalities in the duodenum or stomach.[2, 4, 13, 15, 17] The most common abnormalities noted are partial or complete duodenal obstruction, obstruction at the pylorus, distortion of the distal end of the stomach, widening of the duodenal loop, extrinsic pressure defects, gastric or duodenal mucosal defects or motility changes, duodenal ulceration, and filling defects.

Oral cholecystograms and intravenous cholangiography are usually not helpful because excretion of the contrast media by the liver is usually not sufficient in this disease to adequately demonstrate the biliary system. More recently per cutaneous transhepatic cholangiography has been done with demonstration of the bile ducts when the above procedures have failed. However, this procedure is somewhat dangerous, and bile peritonitis may be a serious complication. Splenoportography may be helpful in diagnosis of carcinoma of the pancreas.

Recently other procedures have been done in an attempt to diagnose early carcinomas of the pancreas. Pneumoretroperitoneal pancreatography has been found in some cases to localize neoplasms in the head, body and tail of the pancreas.[2] This procedure involves the opacification of the stomach and duodenum with oral barium and the presacral injection of air, oxygen or carbon dioxide to outline the pancreas. Pancreatic angiography may be helpful in the future. This procedure involves translumbar aortography with selective placement of guided catheters in branches of the abdominal aorta.[2] These latter procedures are difficult, are somewhat hazardous, and are available in only a limited number of medical institutions.

In a moderate number of patients the clinical diagnosis cannot be made despite a carefully taken history, thorough physical examination, and extensive laboratory studies. In these cases surgical exploration is necessary to establish a definite diagnosis. It should not be used indiscriminately but employed judiciously when it appears that the patient has a serious disease that might be benefited by surgical therapy. If one waits for a characteristic clinical picture of carcinoma of the pancreas to develop in every patient before surgery is advised, the most optimal time for operation will be missed in most patients.

Therapy. The only treatment with hope of cure is surgical extirpation of the lesion, which unfortunately is possible in a very small percentage of cases. In Nightingale and co-workers' series[4] of 100 cases, 67 were operated on, and in only 6 was radical resection feasible. The rate of curability in carcinoma of the pancreas is about 1 per cent.[2] It is estimated that only 10 per cent of those cases of carcinoma of the head of the pancreas which undergo resection survive 5 years.[28] The results of resection for carcinoma of the ampulla of Vater are generally more satisfactory. When resection is impossible palliative relief from jaundice and pruritus frequently can be obtained by an anastomosis between the biliary tract and the upper small intestine or stomach.

Various forms of irradiation and radioactive isotopes have been tried and found not to be too helpful. 5-Fluorouracil therapy may be helpful in a few patients. Pain not controlled by drugs may be relieved for months by bilateral injection of the splanchnic nerves with alcohol.

Report of Case

The patient, a 60-year-old Negro female school teacher, was first seen in July 1959 because of episodes of difficult breathing of 1 year's duration. She stated that during the preceding year she had had frequent episodes of feeling that she was not getting air deep enough into her lungs and that there was a "catch" in her breathing. These episodes would last a few minutes and always occurred while she was resting and never on exertion. The patient stated that she was nervous and that these episodes would often follow a period of tension. There was no exertional dyspnea, orthopnea, paroxysmal nocturnal dyspnea, pedal edema, cough, or chest pain. There was no history of heart, lung disease, or hypertension. The patient stated that she felt well and that her strength and energy were good. She had not noted any paresthesias accompanying her breathing difficulty. She had no other complaints. Her appetite had been good, and her weight had been the same for years. She denied any abdominal distress. Her bowel movements were regular, and there had been no change in the color of her stools. Her menses had ceased at age 42.

The past medical history was negative. The patient denied any previous illness or operations. She had been married for 18 years when her husband died in 1953. She had never been pregnant. Her mother was living and well. Her father died at age 68 of carcinoma of the kidney, and a sister had died at age 53 of cancer of the uterus. One sister was living and well. The patient did not smoke or drink alcoholic beverages. She had not consulted a physician in many years and was not taking any medication.

The patient was a light-skinned Negress who appeared healthy. The blood pressure was 160/90. The height was 5 feet 4½ inches, the weight 151 pounds. The temperature was 98°F (orally). The heart rate was 92 per minute with a regular rate. The respiratory rate was 16 per minute. Mild external hemorrhoids were present. The entire physical examination was negative. The heart was not enlarged, there was a normal sinus rhythm, and no murmurs were heard. Examination of the lungs was negative. There were no enlarged organs or masses palpated in the abdomen.

The hemoglobin was 11.1 Gm. The red blood cell count was 3,710,000 per cu. mm., and the white blood cell count 6,050, with 55 per cent segmented neutrophils, 44 per cent lymphocytes, and 1 per cent monocytes. The hematocrit was 37. Urinalysis was negative. The blood sugar 1 hour after eating was 128 mg. The sedimentation rate was 24 (Wintrobe). A chest roentgenogram was negative. Serum Mazzini was negative.

A diagnosis of hyperventilation syndrome was made, and the patient was placed on meprobamate 400 mg. 3 times daily as needed for nervousness.

The patient was next seen on August 29, 1960. She stated that in mid-July, 1960 she developed a constant gnawing sensation in the epigastrium which was helped slightly by eating. There was no pain at night. The distress persisted in the eipgastrium and did not radiate. In early August 1960 she developed anorexia and pruritus. Since then she had lost 9 pounds. In early August 1960 she vomited 3 times in 1 day. There was no hematemesis or further vomiting. There was no dysphagia. About August 15, 1960 she noted icterus of her sclerae and skin and dark urine and light stools. Her bowel movements were regular, and occasionally she had noted a small amount of red blood in her stools, especially after straining, which she attributed to hemorrhoids. There were no tarry stools. She had felt weak for about 2 weeks. She believed her urine had become lighter in the last few days.

There had been no fever or chills. There was no history of previous jaundice, liver disease, or gallbladder disease. She had not received any transfusions, injections, or known exposure to hepatotoxic chemicals. She did not drink alcoholic beverages, and the only medication she had taken was antacids for the epigastric distress.

Physical examination revealed a rather deeply jaundiced female who appeared chronically ill. The liver edge was palpated 3 fingerbreadths below the right costal margin. It was not tender, and no nodules were felt on its surface. There were no other palpable abdominal masses. The gallbladder and spleen were not palpable. Rectal examination revealed mild hemorrhoids, and otherwise was negative. The stool was a light tan color and guaiac-negative. Pelvic examination was negative. The patient weighed 135½ pounds. The blood pressure was 150/82. The temperature was 98.2°F (orally). The remainder of the physical examination was negative. The patient was admitted to George Washington University Hospital for further observation.

The hemoglobin was 10.9 Gm. and the hematocrit 33. The red blood cell count was 3,750,000 and the white blood cell count 7,050 per cu. mm., with 56 per cent segmented neutrophils, 38 per cent lymphocytes, 3 per cent eosinophiles, and 3 per cent monocytes. Urinalysis revealed a strongly positive reaction for bile but otherwise was negative. The blood sugar 1 hour after eating was 144 mg. Serum Mazzini was negative. Liver function tests on the first day the patient was seen revealed a total serum bilirubin of 12.5 mg. with the direct reacting fraction 8.6 mg. and the indirect fraction 3.9 mg., alkaline phosphatase 22 Bodansky units, thymol turbidity 0.4 Maclagan units, and cephalin cholesterol flocculation negative at 48 hours. Serum chloride was 91 mEq. per liter, CO_2 combining power 21.8 mEq. per liter, serum sodium 134 mEq. per liter, and serum potassium 4.1 mEq. per liter. One stool examination revealed a trace of occult blood; another was negative for occult blood.

The patient was given a high-carbohydrate, high-protein diet, and 1 multiple vitamin capsule daily. In a few days she felt much better and had only occasional mild epigastric distress. She lost 3 pounds in the first 3 days. Thereafter her weight remained unchanged. The initial impression was that the patient had obstructive jaundice, most likely due to carcinoma of the head of the pancreas. It was decided to observe the patient for a short period in an attempt to rule out the possibility of hepatitis. In a few days it became obvious that the jaundice was receding. The total serum bilirubin fell from 12.5 mg. to 1.4 mg. with a decline in the alkaline phosphatase. The stools returned to a normal brown color. The patient was afebrile during her entire hospitalization.

A chest roentgenogram was negative. Roentgenographic examination of the upper gastrointestinal tract was normal. No abnormalities were found in the esophagus, stomach, duodenum, and proximal jejunum. An oral cholecystogram was attempted when the total serum bilirubin was 2.9 mg. and revealed only faint visualization of the gallbladder. No stones were seen. One week later an oral cholecystogram was done using double the usual dose of Orabilex® tablets, when the total serum bilirubin was 1.4 mg. The gallbladder could not be demonstrated.

The gallbladder, despite daily examinations, could not be palpated. The patient appeared to improve while in the hospital. Her appetite increased, she stated she felt much stronger, and her pain practically disappeared. The receding jaundice made the diagnosis of carcinoma of the head of the pancreas seem most unlikely. The possibility of carcinoma of the ampulla of Vater was considered. However, the most likely diagnosis seemed to be a silent common bile-duct calculus.

The patient had an exploratory laparotomy on September 29, 1960, 4 weeks after hospitalization. Exploration of the abdomen revealed a distended gallbladder. Examination of the pancreas revealed a stony hard mass in the head obstructing the common bile duct. The liver was enlarged, and there were large metastatic nodules in both right and left lobes. Liver biopsies were made of 2 of these metastatic nodules. The microscopic diagnosis was metastatic adenocarcinoma consistent with the pancreas as the primary site. A cholecystojejunostomy and gastrojejunostomy were done.

Postoperatively the patient did well and was discharged from the hospital 2 weeks after surgery. She felt well for about 1 month, following which she developed increasing anorexia, slow weight loss, and epigastric pain, usually after eating and often occurring during the night. Three and one-half months postoperatively she developed a massive gastrointestinal hemorrhage and died 2 days later.

Postmortem examination revealed the head of the pancreas to be almost completely replaced by tumor consisting of lobular masses of cells resembling pancreatic acinar cells. The common bile duct was surrounded by the tumor, the center of which was necrotic. There were 2 large ulcerations in the duodenum which microscopically consisted of tumor cells interspersed with necrotic tissue. There were many metastatic nodules in the liver. The gastrojejunostomy and cholecystojejunostomy were both functioning. The final anatomic diagnoses were adenocarcinoma of the head of the pancreas with extension to the duodenum and metastases to the liver, regional lymph nodes, adrenals and subcutaneous tissue of the right breast, and massive hemorrhage from the duodenum.

Discussion

The onset of the patient's illness and initial liver function studies were very suggestive of malignant obstruction of the common bile duct. A presumptive diagnosis of carcinoma of the head of the pancreas was made when the patient was first seen. There existed the possibility of hepatitis of the cholangiolitic variety simulating extrahepatic obstruction, and so a period of observation was begun. Within 2 weeks the jaundice had almost completely cleared, and the patient appeared clinically improved. These unexpected developments made the diagnosis much less certain. The predominance of the direct-reacting bilirubin fraction with an elevated alkaline phosphatase and normal thymol turbidity and cephalin cholesterol flocculation with only a mild to moderate elevation of the serum glutamic oxalacetic transaminase all strongly indicated an extrahepatic biliary obstruction.

The decline of the serum bilirubin to essentially normal values in 4 weeks made the diagnosis of carcinoma of the head of the pancreas seem most unlikely.[10, 17] Carcinoma of the ampulla of Vater or common duct calculus seemed much better possibilities. In patients with carcinoma of the ampulla of Vater, recurring episodes of biliary obstruction, unassociated with biliary colic, and with freedom from symptoms between episodes of jaundice are not uncommon. About one-third of patients with ampullary lesions have pain, often relatively mild and usually located in the right upper quadrant. Occasionally these patients may have severe pain suggesting biliary colic, and about 50 per cent have chills and fever with or without pain and jaundice.[17]

The improvement in the patient's appetite and sense of well-being were more suggestive of a benign process. The fact that the gallbladder failed to show when the total serum bilirubin was essentially normal suggested gallbladder disease. For these reasons, in spite of the history, a silent common duct calculus seemed more likely. The inability to palpate the gallbladder was in keeping with this diagnosis.

The operative findings were unexpected. At the time of surgery the total serum bilirubin was 1.4 mg. Four weeks previous it had been 12.5 mg. The reason for the decline in the serum bilirubin is not clear. This is a most unusual finding in patients with carcinoma of the head of the pancreas. At the time of surgery the head of the pancreas contained a stony hard mass obstructing the common bile duct, causing distention of the gallbladder. Perhaps the carcinoma started in the ampullary region causing obstruction with jaundice, followed by sloughing of necrotic tissue with relief of the obstruction. Perhaps initially there may have been edema of the ampullary area, which slowly decreased and lessened the obstruction.

The findings at both surgery and necropsy are not helpful in explaining the relenting jaundice. The diagnosis made at each was carcinoma of the head of the pancreas, and microscopic sections at necropsy indicate that this was the correct diagnosis. At the time of surgery, extension into the surrounding head of the pancreas may have made the exact origin impossible to detect.

It is evident that a month of observation in this case was much too long. Surgery was planned within 2 weeks after hospitalization, when it was obvious that the patient had extrahepatic biliary obstruction. Her condition was good, and there was no reason to delay surgery. The patient herself was reluctant to be operated on, believing that she would get better without surgery. Because the jaundice was receding the urgency of surgery was not stressed. Perhaps this is another instance where surgery was delayed past its optimal time. At the time of surgery there were large metastatic nodules in the liver. It is unlikely that surgery done a few weeks sooner would have altered the final outcome.

Summary

Carcinoma of the pancreas may present a very difficult diagnostic problem. The most frequent symptoms are weight loss, pain, and jaundice. Physical examination often is not helpful in the differential diagnosis. A palpable gallbladder in a jaundiced patient is a strong indication of a malignant condition, usually carcinoma of the head of the pancreas. The most helpful laboratory findings are those of obstructive jaundice and a decreased volume of external pancreatic secretion. Frequently cytologic examination of this fluid is positive. Newer roentgenographic techniques offer some promise of help in the early diagnosis of carcinoma of the pancreas. Unfortunately most of these procedures are difficult to perform.

A case of carcinoma of the head of the pancreas has been presented with the very unusual feature of a marked decline of the serum bilirubin over a 4-week period of observation. The explanation for this is not known. Perhaps the tumor originally started in the region of the ampulla of Vater causing obstruction with later sloughing of necrotic tissue with a decrease in obstruction. However, surgery was performed when the serum bilirubin was essentially normal, at which time a large tumor in the head of the pancreas and metastatic nodules in the liver were found.

When a diagnosis of carcinoma of the pancreas seems probable, early surgical exploration is advisable. If one waits for a characteristic clinical picture to develop in every patient the optimal time for operation will often be missed.

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PRESIDENT'S PAGE

JUNE BROWSING

With the tantalizing days of June drawing near and the meeting of the membership to decide on the future headquarters of our Society pending, I wondered what our members were talking about and doing a hundred years ago —in 1863–64–65—the Civil War years. Of priceless value, historically, to the Society, is its minute book of January 1, 1838 to October 31, 1866. Dr. Lamb states, in his History of the Society 1817–1909, that the minutes before 1838 were either lost or destroyed by fire.

Two meetings of the Society were called in 1863, January 5 and July 6, but in both instances there was no quorum and the Society adjourned. At the first meeting called in 1864 a quorum was present and officers elected. The new President was Dr. Joseph Borrows. The Treasurer, Dr. William Marbury, submitted his report, which showed that the Society's finances had grown from a balance on hand, January 7, 1861, of $11.44 to $83.62 on January 4, 1864.

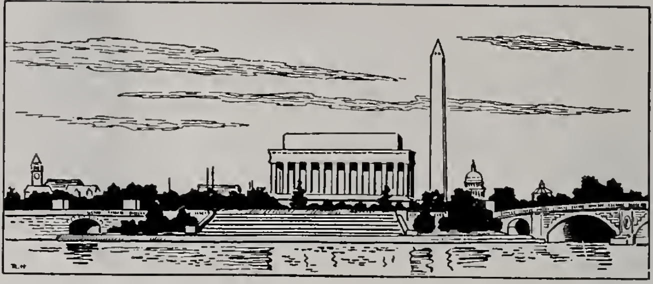
From 1862 until 1865 meetings were held quite regularly at the Medical Department of Georgetown College. They were concerned largely with elections to membership and with resolutions to deceased members. These resolutions were drawn up by appointed committees and followed a rather stereotyped pattern, e.g., "Resolved: That in the decease of Dr. —— the medical profession has lost one of its most distinguished and exemplary members and this community the valuable services of a skilful and attentive physician." Upon the death of Dr. Valentine Mott, of New York, the Society was moved to recognize a distinguished non-member as "one of the great landmarks of medical science—one of the great pioneers of practical surgery not only of our country but of the world."

However, the family character of the profession in Washington at that time can hardly be more clearly set forth than in such a resolution as: "In token of respect, the members of the Society will attend his funeral in a body, and will wear the usual badge of mourning for 30 days." It was also customary to appoint a committee to take charge of funeral arrangements. These customs were in vogue as late as 1876, according to Dr. Lamb.

With succeeding months the minutes indicate more discussion of scientific papers. It became usual to appoint a speaker at one meeting to make a presentation on some designated topic for the following meeting. Some of the essays presented in 1864 dealt with vaccination, Asiatic cholera, diphtheria, typhoid fever, placenta praevia, syphilis, epilepsy, and the use of digitalis and sulphuric ether in delirium tremens. An historic paper was one read by Dr. R. K. Stone, May 3, 1865, which concerned the death of President Lincoln and the results of the autopsy.

A meeting place was a problem in those days too. Dr. Lamb mentions some 20 different places between the years 1817 and 1909. In due course, he says, the members tired of going from one place to another, and the first movement toward a building of its own was made in an address by Dr. Joseph M. Toner, December 20, 1865.

Any member of the Society who has some leisure hours during these warm spring days can find some fascinating material in the Medical Society's records. Every member ought to have a copy of Dr. Lamb's History (copies are still available); the minutes referred to here are beginning to fade but the writing is excellent and legible.



EDITORIALS

Thirty Years with the Medical Society

Joseph E. Imes, or "Joe" to all the staff and members of the District Medical Society, completed 30 years' employment with the Society on May 1. It was May 1, 1933, that Dr. A. B. Bennett, then Chairman of the House Committee, selected Joe for the job of custodian.

However, over the years, Joe has functioned in many more capacities than custodian. With living quarters included, the Society's building has been both home and office to Joe, and he has invested his duties with the same concern for both. Before the War Joe never failed to be on hand for the Medical Society's regular Wednesday night meetings, and he came to know and to be well known by the members during those years.

When the Medical Bureau opened for business in December 1940 Joe was charged with the safety of the Bureau operators when on duty. Undoubtedly, much credit should go to Joe that, at least until this writing, no Bureau employees have been molested going to and from their duties, which are carried on around the clock.

Like most of us, Joe has had his tribulations as well as his joys. For many years he was assisted, when need arose, by his faithful wife, Gertrude. Their daughter, Evelyn, lives in New York. When Gertrude died after a lingering illness, Joe carried on alone.

However, "carried on alone" is both true and untrue for Joe Imes. Born November 3, 1881, in Annapolis, he was orphaned at an early age and spent his boyhood years in a home for orphans in the District of Columbia. Since the age of 14 he has earned his own living. But Joe is a friendly person, and most of those who have lived or worked in the 1718 M Street block know him and call him their friend, and they include members of the Police Department. In fact, Joe has often been called the "Mayor of M Street," a title which conveys both the respect and the affection in which he is held.

The years became brighter for Joe when Mathilda came into his life, and this writer aided and abetted him in striving to keep the numerous night meetings of Sections and specialty groups from encroaching on his Thursday evenings. That was the evening when Mathilda invited Joe for dinner and cooked his favorite dishes. And in due course, the courtship became marriage, and Mathilda came to live in the 1718 M Street apartment. Mathilda too has passed on, and Joe says there will not be a third.

Physically, the years have not taken heavy toll. To those of us who have known him over the years, he appears much the same; maybe his step is a bit slower. Although Past Exalted Ruler, he no longer attends the local meetings of The Elks or plans his vacations to attend its national meetings in Chicago or New York. In January, 1957 he was semi-retired; his day duties were taken over by younger men, but Joe still is on hand to open the building for the night meetings. He is a favored visitor in the Medical Bureau offices where he often dispenses samples of his culinary abilities, which are considerable, to those on duty. And many a night Joe has answered the call of distressed operators, who thought they heard unaccustomed noises in the early hours of the day, and after inspection assured them that no one was about.

At the business meeting of the Society, November 27, 1957, Dr. Herbert P. Ramsey, then Chairman of the Executive Board, called Joe to the platform to express the Society's appreciation

Opinions expressed in contributions to the Editorial Section are those of the writers and do not necessarily reflect the views of the Medical Society of the District of Columbia

to him for his loyal service and friendship to the members. At that time he was given a meerschaum pipe, a gift from the Board which Joe treasures.

Joe has become known also to many distinguished medical visitors. One of them was the late Dr. Gregory Zilboorg, of New York, internationally known psychiatrist, whose hobby was portrait photography. On a visit to Washington to address the Washington Psychiatric Society, he brought his camera and found Joe an expressive subject. He later sent him several prints of each of the poses he took; reproduced here is one of them.

On May 1, this year, as Joe chalked up his thirtieth year with the Society, the Executive and Medical Bureau staffs gathered around cake and coffee to celebrate the event. And good wishes came to him too from Dr. Bennett, Editor Yater, Theodore Wiprud, Lawrence A. Zupan, and other long-time friends. The same evening, the Washington *Star's* Rambler devoted his column to a story of Joe and his devoted services to the D. C. Medical Society.

A. L. E.

Photo by Gregory Zilboorg, M.D

"JOE" IMES: D. C. Medical Society custodian, 1933–1963.

Medical Motion Pictures for the 1963 ASA

The Committee on Medical Motion Pictures is selecting what it considers the 40 best medical films produced during the past 18 months for showing at the forthcoming Scientific Assembly in November.

The Assembly calendar is a busy one, and the members of our Society are busy physicians whose time available for attending is regretfully too little. In order to help them make the best use of their time, the Committee will publish in the official program the exact time each film will be shown, running time, and summary of content.

The standards used by the Committee for appraising the films are high. Each film must have been prepared with scientific objectivity and under the supervision of eminently qualified experts. Subject matter must cover a wide variety of useful topics. Excellent leads on outstanding medical films have come to us from many members of our Society in response to our request early this year for such suggestions. Also, the Committee has at hand the record of actual attendance for each film shown during the past 4 Scientific Assemblies. Thus, a new yardstick has slowly evolved, offering a more accurate guide to what appeals to most of our members.

Attendance at past Assemblies has proved motion picture programs to be very popular. Features unique to motion pictures undoubtedly contribute to this popularity. These include animation, X-ray photography, microphotography, and time-lapse photography.

And so, in its special way, the medical film serves as a change-of-pace feature in a balanced scientific program. It has a limitation, however. Unlike lectures and panels, seminars, and manned exhibits, a motion picture is all give and no take. It cannot debate or answer questions. The Committee hopes to minimize this drawback by encouraging film authors, whenever possible, to be present at the time of projection. Opportunity for on-the-spot narration will be provided as well as time for questions and answers.

A carefully planned medical motion picture program serves to impart scientific information, the objective of every Assembly. Its consistent popularity in the past has proved it to be more than icing on the medical information cake. It is an important part of the cake itself.

Joel B. Hoberman, M.D.
Chairman, Committee on Medical Motion Pictures, Annual Scientific Assembly

Highlights of Blue Shield Meeting

The National Association of Blue Shield Plans met in Chicago, March 31 and April 1, 1963. For the most part it was a pretty dull meeting, with "administration" slides well greased to move things slowly but surely.

The only real interest arose from a Medical Service of D. C. resolution calling for Federal assistance in providing voluntary health insurance for the aged. Dr. Donald Stubbs, with his usual flair for leadership, urged positive, realistic consideration of this problem of providing medical care to the aged population through already proved voluntary plans. "We have," he said, "shown the value of the voluntary way through our coöperation with Government in the Federal Employee Insurance Program; let's not retreat to another Medicare (Dependents of Servicemen's Program) with physicians under direct control of Government."

Dr. Stubbs spoke from experience in making the voluntary way the best way. He, "Ted" Wiprud, and George McGovern can take considerable credit for the fact that Medical Service of the District of Columbia stood high among the 70 Blue Shield Plans reported on at this meeting. Medical Service of D. C. ranked first among Blue Shield Plans in per cent of population enrolled (82.7); it also ranked number 1 in per cent of Federal employees enrolled under the Federal Employees Program. It ranked third in its success in competing with other programs, having in Medical Service of the District of Columbia 71.2 per cent of all persons in this area covered by all surgical carriers. The local Blue Shield was even ranked fourteenth in total membership among the 70 Plans.

As one of those who prepared the original prospectus for Blue Shield in the 1940's, I was most disappointed to learn the plans were still arguing about "service benefits, income levels, and national account agreements." One could not help but wonder whether prosperity or perhaps high salaries had not taken their toll on the drive and progress which characterized Blue Shield during the early years.

But some hope still remains for a revival of the energy and life so long displayed by these Plans. Dr. Stubbs was elected to the Executive Committee of the Association and will, it seems evident, continue to press for advancement and progress.

G. W. C.

Fifty Year Club of American Medicine

Graduates of medical schools of the Class of 1913 or prior are eligible to join the Fifty Year Club of American Medicine, an exclusive organization composed of physicians who have devoted a half century or more to the study and practice of medicine.

The Club meets each year during the Annual Session of the American Medical Association. At the meeting this month, Dr. S. Meigs Beyer, of Punxsutawney, Penna., a graduate of the University of Pennsylvania School of Medicine, Class of 1907, will be installed as President. Dr. Beyer, who is a close friend of the President-elect of the D. C. Medical Society, Dr. Edward W. Nicklas, has set a goal of doubling the membership of the Fifty Year Club during his term of office. In the belief that this group can be a potent force in carrying out the traditions of American medicine, he has expressed the desire that every eligible physician become a member. In addition to providing fellowship, the Club is planning to establish a scholarship fund to assist worthy medical students.

The membership fee is $5.00 per year. Each new member is furnished with an attractive lapel button and a certificate suitable for framing. Eligible physicians may join by sending a check for $5.00 (payable to Fifty Year Club of American Medicine) to Dr. J. H. McCurry, Secretary, Cash, Arkansas. In addition to his name and address, the doctor should state his medical school and year of graduation.

Kerr-Mills and HEW

As many have suspected, HEW seems not to have its heart in making a success of the Kerr-Mills Medical Care to the Aged Program. A 16-page HEW report on Government help for the aged devoted a single paragraph to Kerr-Mills. Congress can pass legislation, but can it make it effective without the Administration's support?

Availability of Packed Red Cells

The Blood Committee of the D. C. Medical Society calls the attention of area physicians to the recent increase in the availability of packed red cells from the Washington Metropolitan Red Cross Blood Donor Center.

Because of new techniques in preparation of packed red cells, these cells have the same shelf-life, 21 days, as whole blood. This removes the one major disadvantage which packed cells have had up to the present time.

The Blood Committee would like to point out that packed cells have certain advantages over whole blood. These include a lower incidence of plasma reactions, a lower incidence of white cell reactions, and a lessened burden to the circulatory system of the recipient. Indeed, packed cells are equal to or more effective than whole blood in nearly every clinical situation. The only patient who should obtain banked whole blood in preference to packed cells is the patient who has had a sudden decrease in circulatory volume and in whom it is therefore desirable to restore blood volume along with oxygen-carrying capacity.

The increased availability of packed red cells has resulted from the fact that the Washington Metropolitan Red Cross Blood Donor Center has initiated the preparation of antihemophilic globulin (Factor VIII) concentrates from fresh whole blood. As a by-product, 400 units of packed red cells have become available each month. An additional 100 units of packed red cells are produced each month as a result of the preparation of fresh frozen plasma for use in the treatment of certain emergency bleeding problems.

Your Blood Committee is concerned that the demand for these 500 units of packed red cells has been less than the supply, and there has been a resultant loss of blood product to the community. The Committee hopes that physicians in the community will bear this increased supply of packed red cells in mind when they order blood for patients in hospitals served by the Washington Regional Red Cross Blood Donor Center.

Committee on Blood, The
Medical Society of the
District of Columbia

Federal Honors to Dr. Calver

Dr. George W. Calver, Physician to the Congress of the United States for 35 years, was honored, May 3, by the Council of Federal Medical Directors for Occupational Health. On behalf of the Council, the Honorable John W. McCormick, Speaker of the House of Representatives, presented Dr. Calver with a Certificate of Honorary Life Membership "in recognition and appreciation of his inspiring leadership in the promotion and elevation of the Profession of Occupational Medicine and for his great worth and distinction as a physician and benefactor of humanity." President Kennedy sent a congratulatory telegram and Vice President Lyndon Johnson stopped by to extend his personal good wishes to Dr. Calver. Mrs. Calver was present to witness the honors conferred upon her distinguished husband.

GEORGE W. CALVER, M.D., Physician to the Congress for 35 years.

Dr. Calver, a Washingtonian, received his medical degree from George Washington University in 1912. A Naval career officer since 1913, he was assigned in 1928 to duty at the U. S. Capitol to be in attendance on the Sessions of Congress in accord with a resolution passed by the House of Representatives. In 1931 the Congress passed legislation to prohibit his transfer until otherwise provided by law. It is reported that there has been a 70 per cent reduction in deaths from coronary disease among Congressmen since he took office. Dr. Calver now holds the rank of Rear Admiral, U. S. Navy, retired.

Dr. Calver is a Fellow of the American College of Surgeons, the American College of Physicians, the American College of Cardiology, and is a member of many other scientific societies. He has been an Associate member of the District Medical Society since 1928.

Dr. Allen S. Cross, Medical Director of the U. S. Government Printing Office, presided at the luncheon ceremony, which was held in the Banquet Room of the U. S. Senate. He was elected President of the Council at a brief business meeting preceding the luncheon. Organized in 1962, the Council of Federal Medical Directors for Occupational Health consists of over 30 physicians from the principal agencies of the Federal Government in the Washington and Baltimore areas.

Funkhouser Award to Dr. Peabody

Dr. J. Winthrop Peabody, Sr., Washington chest specialist, received the second Edward Kramer Funkhouser Memorial Award for distinguished service in the field of public health at the 61st Annual Dinner Meeting of the D. C. Tuberculosis Association, April 29, at the National Press Club.

Dr. Peabody received a medal, and his name will be added to the permanent bronze plaque at the Association's headquarters at 1714 Massachusetts Avenue, N.W. The Funkhouser Award honors the memory of the immediate past Executive Director of the Tuberculosis Association.

Dr. Peabody, a native of Massachusetts and a graduate of Boston College, is an alumnus of Georgetown University School of Medicine, Class of 1914. After serving an internship and residency at the D. C. Hospital for Chest Diseases and Tuberculosis (the old Upshur Street TB Hospital, now the Northwest Central Clinic) he became Chief Medical Officer there and, in 1921, Superintendent. He was instrumental in the development of Glenn Dale Hospital for the District's TB patients, and served as its Superintendent from 1934 to 1939. Currently he is consultant in chest diseases to Glenn Dale and to the U. S. Naval Medical Center, and continues in private practice.

Dr. Peabody has served on the medical faculty of Georgetown since 1921. In 1951 he was awarded the Vicennial Medal for his services to the University, and in 1957 he was made Emeritus Professor of Diseases of the Respiratory System.

He was a member of the committee of chest specialists which, after years of effort, succeeded in winning the approval of the AMA House of Delegates to create a Section on Diseases of the Chest. He served as Secretary at the organizational meeting and as Chairman of the Section from 1951 to 1952.

He was one of the Founders' Group of the American College of Chest Physicians and served as President of the College from 1942 to 1944. From 1945 until 1958 he was Chairman of its Council on Postgraduate Education. He is Associate Editor of the journal, *Diseases of the Chest.*

J. WINTHROP PEABODY, SR.: Recipient of Edward Kramer Funkhouser Memorial Award.

Throughout his career Dr. Peabody has been active with local and national voluntary TB associations. He served on the Board of Directors of the National Tuberculosis Association for 14 years and was President of the D. C. Tuberculosis Association from 1939 to 1943.

This is only a brief résumé of Dr. Peabody's distinguished career—a career devoted to improvement in the treatment and care of tuberculosis and to the advancement of postgraduate medical education in this field. His son, Dr. J. Winthrop Peabody, Jr., is carrying forward his father's work in the field of thoracic surgery.

The Information Explosion and the Pharmaceutical Industry*

AUSTIN SMITH, M.D.†

President, Pharmaceutical Manufacturers Association

Being with you today brings on a certain nostalgia. I cannot help but recall my pleasant association with medical writing in years past. Those were years of seeking out the significant and the new, trying to understand it, and then presenting it in readable form to a highly critical and sophisticated readership. My work has changed only slightly. We in the Pharmaceutical Manufacturers Association seek out the new and significant and try to understand it. But we have an obligation to act on the information, which places a heavy hand of responsibility on our shoulders.

Just a brief word about the Pharmaceutical Manufacturers Association. It is a nonprofit, scientific, professional and trade association representing 141 U. S. manufacturers of prescription drugs, who account for about 95 per cent of this country's drug production. Contrary to what you may read or hear, P.M.A. is not a lobbying organization. Neither is it concerned with the pricing and marketing practices of drug firms. It is, on the other hand, essentially an educational institution. The Association seeks to keep its members as well as the public informed of developments in the industry, and pertaining to the industry. Its message to its membership, therefore, is scientific and technical. We have committees for the study of medical problems, public relations, production problems, the economics of medical care, current and proposed legislation, and numerous other subject matters.

P.M.A.'s message to the public is interpretive and popularly written. The Association publishes a *Newsletter* to cover legislative and governmental matters; a *Bulletin* of more general industry interest; *Medicine at Work*, dealing with the field of medicine, generally, and drug therapy in particular; a Yearbook, a Trade Mark Register, a Fact Book, and numerous pamphlets and flyers. In a way, this trade association with its professional overtones has devised a rather elaborate system for communication with its members and increasingly with the public

Industry's Research Effort

It is of special importance to have such a system of rapid and regular communication, because among the various fields of science no other has been subject to a more profound information explosion than that of drug therapy. Five hundred and forty-four new chemical entities of therapeutic value have been placed in the hands of the American physician during the past 20 years. In recent years new drugs have been arriving on the market at the rate of almost one a week. More progress has been made in drug therapy during these past 25 years than was made in all the previous centuries combined. Drugs are becoming more sophisticated and more complex. They can be used, some of them, with the precision of a surgeon's scalpel. It is the rare individual today who is aware of all of these medicines, the therapeutic usefulness of each, the relative value of one as against another, and possible side-effects and contraindications. But, fortunately, no medical practitioner must know about all of these drugs; he chooses the ones he needs for his practice.

The story of drugs under study is even more complex. There are some 13,500 research scientists and supporting staff members in the industry who are authors of several hundred scientific papers each year plus thousands of routine reports and memoranda. Over 100,000 substances are tested annually in our laboratories. Several thousand are investigated in hospitals and clinics. A handful emerge for marketing. In 1958, for example, the latest year for which there are comprehensive figures, 114,000 substances were tested—50,300 for allergies and infectious diseases; 28,000 for cancer; 12,100 for mental health, neurologic diseases and blindness; 8,200 for heart disease; and 6,300 for arthritis and metabolic diseases. Some never passed beyond the test tubes. Others were tried in animals. P.M.A. member firms made use of nearly 9 million animals in tests last year: 5.7 million mice, 2.2 million rats, 739,000 chickens, 107,000 guinea pigs, 98,000 rabbits, 36,000 dogs, and 18,000 cats, and thousands of other birds and animals. More than 25,000 investigators in one way or another are involved in the clinical testing of drugs.

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* Presented in part at the 19th Annual Meeting of the American Medical Writers' Association in Washington, D. C., October 12, 1962.

† Formerly Editor of the *Journal of the American Medical Association*.

Men searching for one new drug, for one new technique, have often uncovered information of great value in unexpected and unrelated fields. Because of this it is important for scientists to make conscious efforts to recognize the limitations their seemingly unimportant findings may have for others.

New Drug Laws

The general public, as well as scientists, should recognize limitations on progress posed by the finite availability of time, qualified persons, and accumulated knowledge. If your field of interest were legislation as it bears on the medical profession, your task would not be much simpler than that of the researcher. There were in Congress in the session that is now coming to a close 5 separate bills pertaining directly to the drug industry. These bills were regularly reviewed and modified as a result of hearing, committee action, and conferences. Hearings on one of the bills alone amounted to 13 volumes, totaling over 10,000 pages. What started out as a bill to lower drug prices ended up as a bill to control drug safety. The matter became further complicated because of a tendency on the part of some to want to distort information for reasons best known to them.

In addition to the 5 bills pertaining directly to the drug industry there were a score of legislative proposals having a major bearing on industry activities, for example, on patents, licensing, and medicare. This is not to mention the state legislative picture, where bills were introduced in 23 state legislatures. Seven of these involved 11 actions regarding clinical testing, which, if adopted, would either have to be brought in line with Federal law and Federal regulations or confusion would result. Even 4 cities have expressed their intention of issuing ordinances governing use of drugs.

Recently a so-called "drug law" was passed by Congress. It has been signed by the President. Thirteen of the main provisions of this law, which amends the Federal Food, Drug and Cosmetic Act, will require implementing regulation. These involve registration of drug firms, factory inspection, quality control, clearance of New Drug Applications, official names for drugs, drug labeling, drug advertising, maintenance of records, rendering of reports, certification of antibiotics, and liberalization of animal feed law.

To give some idea of how complex a set of regulations can become, let me refer to regulations on the clinical testing of drugs which are now pending. These regulations govern the labeling, manufacturing, processing, packaging, distribution, and use of clinical drugs. They set up elaborate reporting procedures for such clinical use. Dr. Howard A. Rusk[1] stated in an article for the *New York Times* last month: "It is difficult to visualize the tons of reports that would come in to Washington under these proposed regulations." Senator Humphrey[2] likewise has warned of the tremendously increased burden that will have to be met by the FDA staff.

Reporting and Advertising Restrictions

Of direct bearing to medical writers is paragraph 10 in the proposed regulations governing new drugs for investigational use, which were published August 10, 1962. This paragraph 10 reads: "Neither the sponsor nor any person acting for or on behalf of the sponsor shall disseminate any labeling, advertising, public relations statements, or news releases representing (an investigational drug) to be safe or useful for the purposes for which it is offered for investigation."

The *Washington Post*[3] has summed up our own reaction to this paragraph in an editorial which states:

> "On its face, the new section would appear to preclude discussion of new drugs at scientific meetings and the reporting of these discussions and papers in professional or general media. The anxieties aroused by premature release of some drugs recently are understandable. The desirability of more careful checking before clearance is self-evident. Neither of these ends seems to require the censorship of scientific conferences, the control of medical opinion, or the suppression of reporting on new discoveries. Society has been menaced by lax administration and poor laws in the past; it can also be menaced by a bureaucracy possessing the power to keep the public from even knowing of their existence."

This paragraph even raises the Constitutional question of Federal interference with freedom of speech and of the press. We are hopeful that the Secretary of Health, Education, and Welfare will recognize that the health and safety of the public are not in any way endangered by the publication of accurate information regarding investigation of a new drug and that he will delete this entire paragraph.*

Reason and good sense brought about the elimination or modification of a number of provisions inserted at one time or another in the bills which ultimately became the Drug Amendments of 1962—provisions which were unrealistic or totally against the public interest. An example of interest to you is a provision which originally appeared in the so-called Celler bill calling for every drug advertisement to carry a full, accurate and conspicuous disclosure of every drug's side-effects and contraindications. The drug industry has no objection in disclosing fully, accurately and conspicuously any and all side-effects and contraindications of drugs it sells, but it does not think that the medical journal advertisement, which is nothing more than reminder advertising, is the place to do this. This is the function of the package insert or a brochure intended to tell the whole story.

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*Editor's note: The Food and Drug Administration subsequently modified this provision in the revision of the regulations, which became effective on February 7, 1963, so as to permit scientists to discuss drug developments with the press.

The provision on advertising was modified to the extent that medical journal advertisements must carry a brief summary of side-effects and contraindications. There is still room for debate on what is meant by "brief" and what can be left out and what had better go into such a summary, but present language is a vast improvement over the original, which, in effect, would have required the advertiser to reproduce the contents of a package insert in each advertisement, thereby discouraging drug advertising in medical journals.

Another provision would have placed the Government in the business of disseminating drug information in printed form. This one was not eliminated until the final joint committee conference to reconcile the House and Senate versions of the bill.

International Information Problems

So far I have spoken only about the pharmaceutical industry's information problems as they pertain to the United States. In an age of rapid communications what happens in this country is bound to have quick repercussions elsewhere, and those in the drug industry are not and should not be isolated from developments in other countries. Thus, the legislative investigation of the drug industry conducted in the United States had effects, for example, in Canada, where 4 separate inquiries were launched; in a number of other countries, where general investigations were started; in Italy, where there is a move to reinstitute the patents system; and in Venezuela, where the government has questioned the safety and value of American drugs in comparison to those manufactured in other countries. There also have been repercussions with respect to prices, controls, and trademarks.

Another recent development has been a new focus on the problem of international exchange of medical information. This problem has been brought to the fore by alleged inadequacies in the exchange of medical data among the countries concerned with drugs, one of which has been much in the news of late. In fact, in the United States this problem was the subject of special hearings by the Senate Subcommittee on Reorganization and International Organization, which is trying to bring about a wider and more fruitful exchange of scientific information between countries, within our own Government's agencies, and between our Government and business, foundations, research centers, and other bodies possessing special scientific knowledge.

Commission on Drug Safety

The drug industry has also taken some new steps to bring about a better exchange and dissemination of critical information in some areas. One of these concerns the recently established Commission on Drug Safety which is studying information from many associations in Europe, Canada, and elsewhere in the world.

Medical writers are more than mere observers of the scene and recorders of information. They are involved in the process of improving collection and dissemination procedures. No one on the health team or intimately associated with the health team is unaffected by regulations, legislation, or other developments affecting any member of the team any more than they are free of the effects of modern chemotherapy, surgery, or sanitation. I believe they can play an important role not only in terms of objective reporting but in making their views known on matters as they unfold; and not only in medical publications, which of course are your easiest and readiest outlet, but in other media, in political action, in representations to your legislators, and in other ways. It is as important to support constructive measures as it is to criticize objectionable proposals.

In sheer volume the explosion in drug information, from research to development to marketing to legislation, is exceeded by the boom in no other scientific field, except perhaps in nuclear physics and aeronautics. We would not have it otherwise. This is a sign of progress, and when we realize that, despite the phenomenal advances of the past quarter century, no disease is com-

(Continued on page 254)

Palliation affords relief but not cure

GENERAL SUPPORTIVE MEASURES

RADIATION

For the individual patient, specific palliative therapy can often result in the relief of pain, regression or healing of malignant lesions, and a significant prolongation of life. Sympathy and sincerity on the part of the physician often work wonders. The fact that something is being done on a rational basis will greatly encourage both the patient and family.

NEUROSURGERY

SURGERY

HORMONE THERAPY

CHEMOTHERAPY

ANALGESIC MEDICATIONS

RESEARCH
EDUCATION
SERVICE

American Cancer Society
District of Columbia Division, Inc.
810 - 18th Street, N.W.
Washington 6, D.C.
EXecutive 3-3690

A Joint Venture of Psychiatrists and Clergy: The Pastoral Institute

ANTHONY ZAPPALA, M.D.

Director, Division of Alcoholic Studies and Chairman, Subcommittee on Public Relations with Professional Groups, The Pastoral Institute

For centuries clergymen and physicians have worked to help troubled people. The dichotomy between healers of the soul and healers of the body has evolved toward an emphasis upon "meaningful oneness" and "comprehensive medical practice"—as clergymen and physicians daily handle human crises and suffering. Religion and medicine have distinctive roles in society, but they continue to share common goals.

With advancements in modern psychiatric concepts and practice we have embraced a dynamic view of human nature that emphasizes love and hate struggling to produce health or illness. The importance of love and understanding in recovery from any illness is now widely accepted. Hope and spiritual strength to facilitate living in a complex and insecure society must be made as available as antibiotics and surgery.

A close collaborative working relationship between clergy and the medical profession has been established at the Pastoral Institute of Washington, D. C. This interdenominational service center has provided the meeting ground for two professions which too often regarded each other as antagonists.

The Pastoral Institute was originally established 4 years ago to assist religious institutions to become more forceful agents for better mental and emotional health through education and training the clergy in handling common pastoral problems and in recognizing ones requiring medical care.

Study of its initial program showed there was a real need for a psychiatric service facility to serve community clergymen—tailored to fit their requirements—where the healing arts of medical science and the pastoral task of the church in the care of sick and troubled people could be coördinated and advanced through the active sharing of attitudes and skills.

The Joint Commission on Mental Illness and Health had reported to Congress in 1961 that out of the 1 in 7 people who admitted that they had sought professional help in problems in living:

42 per cent consulted clergymen
20 per cent consulted physicians in general
18 per cent consulted psychiatrists or psychologists
10 per cent consulted social agencies or marriage clinics.

And of those who turned to their clergyman, 1 out of 3 were regarded as having problems of serious psychiatric dimensions, and yet only 1 out of 10 was referred for psychiatric attention, the report stated.

From these statistics it is easy to see why the clergy has been called the front line of defense against mental illness, if a poorly armed one.

In working closely with the clergy, psychiatrists have found a valued ally. A trained and aware pastor can be of utmost assistance not only in getting a person to realize his need for medical care and to accept it, but also in supporting treatment while in process. Psychiatrists have found that by incorporating what to many people is the most stable relationship in their lives—their relationship to their church—in the treatment program, success has been possible in many otherwise hopeless situations. They have found an informed clergyman can be most valuable in the transition out of treatment and in the follow-up period. And they have found that a healthy religious outlook is a constructive element in the lives of their patients and enhances the success of treatment.

The Pastoral Institute's Division of Clinical Services has had unique appeal to many eminent Washington area psychiatrists by making it possible for them to work with new approaches not always possible in private practice. They have found there a climate for exploratory creative efforts in psychotherapy. Those who wish to venture afield from the traditional 1-to-1 relationship of patient to psychiatrist have been able to work with groups of couples with chronic marriage problems, couples with one or both members of the family alcoholics, or with family units. They have been able to employ the "team concept" by bringing in under medical supervision pastoral counselors, psychologists, and sociologists as part of a "treatment team." Also, the calling in of the referring clergyman as an influential figure in the extended social field of the individual or family is being explored as a possibly effective technique.

The Division of Clinical Services is under the direction of Alexander Halperin, M.D. Working with him are 10 prominent area psychiatrists. People may be referred by their clergymen for diagnostic evaluation, psychiatric treatment, pastoral counseling, or further referral as indicated. Clinical services are undertaken frequently in collaboration with the referring clergyman.

The Division is organized into service units, each directed by a psychiatrist responsible for his unit to the Division Director.

1. The Group Therapy Unit is under the direction of Joseph Abrahams, M.D. Currently this unit is treating 3 groups, each group limited to 4 couples. It is dealing primarily with chronic marriage problems and, secondarily, training professional staff people in group therapy techniques. A treatment team, composed of a psychiatrist and a pastoral counselor, is responsible for each group, and treatment is effected from both psychiatric and pastoral considerations. Patients supplement the group work with individual consultation when necessary.

2. The Family Therapy Unit, under the direction of Maxwell Boverman, M.D., was established to handle cases which can suitably be treated, or sometimes only be treated, through a family rather than an individual approach. Extramural family treatment is frequently employed to avoid the tragedy and disruption of family and professional life by hospitalization in the acute psychosis and in treating other acute family crises which are not likely to yield to more conventional forms of psychiatric intervention. Another important purpose of this unit is the training of professional personnel in family therapy and the education of clergy in the understanding of family problems and their pastoral responsibilities to troubled families in their churches.

At present 12 families are being seen by treatment teams under Dr. Boverman's supervision.

3. The Alcoholism Treatment Unit under my direction is employing group therapy and family therapy techniques in dealing with alcoholic problems. Again, the treatment team concept is employed by the use of a psychiatrist and a pastoral counselor. The Reverend Canon Richard Williams is the Associate Director, and working with us are the Reverend John C. Ford, S.J., and Jean H. Menetrez, M.D.

4. The Pastoral Services Unit is under the direction of the Reverend Knox Kreutzer, who is also the Executive Director of the Pastoral Institute. This Unit provides limited pastoral counseling when the problem is religious or pastoral in character and also provides pastoral counselors to the other units to serve as requested for service on treatment teams.

5. The Psychiatric Residents Training Unit, under the direction of Herbert Cohen, M.D., provides supplementary training for residents at St. Elizabeths. It gives to selected psychiatric residents a carefully supervised experience in the more normal, nonhospitalizable disorders which are typical in the practice of a community psychiatrist.

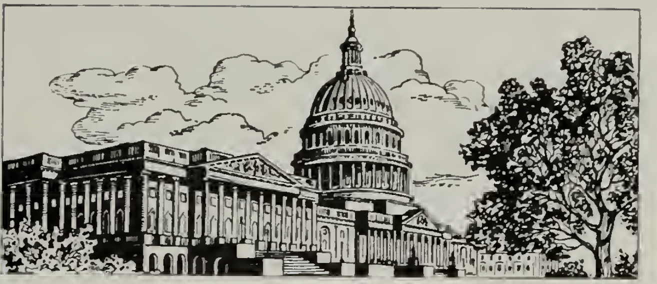
The Pastoral Institute also has a Division of Education which gives training to clergymen and theological students in learning to distinguish the kinds of problems which need to be referred to psychiatrists, to community clinics or agencies, and in learning the art of interprofessional collaboration.

There are presently 4 seminars being conducted under the auspices of the Division of Education. Richard G. Board, M.D., and Marion Richmond, M.D., are teaching 2 of these seminars covering Common Problems in Pastoral Care in collaboration with Rev. Kreutzer. John Parks, M.D., Dean of the George Washington University School of Medicine and Hospital, and 9 members of his staff are collaborating with Charles Waters Thompson, M.D. and Mr. Kreutzer on a seminar in Hospital Calling.

The third division of the Pastoral Institute is on Alcoholic Studies. Because the problem of alcoholism is so widespread and because it presents certain unique sociologic, medical and psychologic aspects, it was determined to deal with it through a separate division of the Institute, which I direct. Last year this Division gave a seminar on Pastoral Care of the Alcoholic Parishioner which was taken by 27 area clergymen, including 2 Catholic priests. The faculty consisted of Dr. Menetrez, Dr. Thompson, Canon Williams, Fr. Ford, and myself.

The Pastoral Institute has been termed a "joint venture" between the clergy and psychiatrists. Its purpose is not to take clergymen out of their field but to help them minister more effectively in it, to help them recognize their professional assets and limitations, and to help them see how important their role can be in providing transition in and out of treatment for their parishioners.

(*Continued on page 254*)



NEWS & PERSONALS

Boards & Committees

The regular meeting of the **Executive Board of the Medical Society of the District of Columbia** was held, April 22, in the Medical Society's building at 7:30 p.m. Dr. W. LeRoy Dunn, Chairman, presided. Present were Drs. J. Spencer Dryden, Karl C. Corley, Edward W. Nicklas, Raymond T. Holden, Duane C. Richtmeyer, and Mr. George W. Cooley, Secretary. Also present were Drs. Grace H. Guin, C. Willard Camalier, Jr., and Arthur A. Morris.

Report of the House Committee

Dr. Morris reported in detail on the activities of the House Committee, which has been studying possible alternatives for the future of the present Society's headquarters. He described the Committee's efforts to determine the availability of land of sufficient size, in this general area, suitable for the Society's purposes. He pointed out that the objective of the Committee is to provide a headquarters which would be attractive for use by physicians both individually and as members of the Sections and specialty societies. "The key to this," he said, "is adequate parking, adequate meeting rooms, and accommodations for dinner and luncheon meetings."

The Executive Board approved the following recommendation of the House Committee: "That the Executive Board seek from the membership the authority to negotiate the sale of the present property at 1710–1718 M Street, N.W. and negotiate the purchase of another property, within a reasonable distance of and less expensive than the present site, for the purpose of constructing a single purpose Medical Society Building."

It was agreed to call a special meeting of the membership in May to consider this action of the Executive Board.

Finance Committee

A previous action of the Executive Board, naming Dr. Victor R. Alfaro to the Finance Committee, was rescinded since this was not in accord with the Constitution and By-laws, and he was named instead as a consultant to the Finance Committee.

The income and expenses of the Society for the first quarter of 1963 were reviewed in detail by the Secretary and the report was accepted as presented.

The Finance Committee called attention to the small number of interns and residents who are members of the Society, and its suggestion, that the Board of Credentials initiate a program to enlist resident and intern interest in the Society, was approved.

The Secretary reported on a proposal, approved by the Finance Committee, of employing a representative to solicit local advertising for the MEDICAL ANNALS on a commission basis. The objective of this step is to augment national advertising, which has decreased as a result of the Kefauver hearings and subsequent legislation.

Committee on Mental Health

On recommendation of the Committee on Mental Health, the Executive Board voted to "endorse the President's recognition of the Mental Health Program previously set forth by the AMA, and to endorse the President's proposal in so far as it follows the principles set forth by the AMA, and to further endorse coöperation with community agencies and mental health agencies concerned with the implementation of this proposal."

Medical Bureau Committee

On recommendation of the Medical Bureau Committee, it was voted not to carry delinquent Alternate Listing Service subscribers over 6 months and Telephone Secretarial Service subscribers over 4 months. It was requested that the names of such subscribers be submitted to the Executive Board and that in each instance where a person is delinquent, he be notified prior to dropping him from the Bureau.

Membership

The following applicants recommended by the Board of Credentials were approved for membership in the Society for 1 year pending action by the membership.

Active Members

Salo Albini, Glenn Dale Hospital
Dimitr Christov-Bakargiev, 2124-37th Street, N.W.
Lawrence A. Dunmore, Jr., 6009 Seventh Place, N.W.
Fred S. Grunwald, 6101-16th Street, N.W.
Kermit Henry Hanson, 825 New Hampshire Avenue, N.W.
William Herbert Harvey, 4508 Salem Lane, N.W.
Thomas E. MacNamara, 8506 Old Georgetown Road, Bethesda, Md.
Henry John Palacios, 3425 A Street, S.E.
Andrew Stanley Tegeris, 10315 Cheshire Terrace, Bethesda, Md.

Associate Members

William Y. Chen, 5014 Adrian Street, Rockville, Md.
Gustavo A. Nava, 1801 Eye Street, N.W.
Fausto Ramon, 2656-15th Street, N.W.

The following resignations were accepted: *Active:* Isabelle Blum; *Associate:* Eugene P. Campbell, Walter A. Leas, D.D.S., Gertrude Ungar, Herbert D. Wolff, Jr., and Leslie K. MacClatchie.

The following transfers were approved, as recommended by the Board of Credentials· *Active to Affiliate:* William B. Glew and Thomas M. Wright; *Associate to Active:* Carl M. Hasegawa and David N. Robb.

Handling of Major Medical Cases

The Executive Board reviewed a letter from Dr. James Scully requesting consideration of a revision in the method of handling Major Medical cases in which the surgical fee is questioned. Since the Review Board for Prepaid Medical Care Benefits presently has this matter under consideration, the letter was referred to the Board for its views and recommendations.

Doctors' Little Symphony

The formation of a "Doctors' Little Symphony" was discussed and endorsed, provided it requires no outlay of funds from the Society.

Committee on Insurance

A report was made on the meeting of this Committee with representatives of the St. Paul Insurance Company to review the present professional liability program sponsored by the Society. A revision in rates was recommended by the Insurance Company. However, in view of the fact that professional liability insurance will now come under a new committee, the Committee on Medicolegal Activities, it was agreed that the rates should not be changed at this time and to recommend to the Committee on Medicolegal Activities to study the entire program.

Student AMA

As in past years, it was voted that the Student AMA of the 3 D.C. medical schools be granted $100 each to assist in sending representatives to the National SAMA Meeting.

Central Charge Service

The medical-dental program of the Central Charge Service, under which dentists and physicians may choose to have that organization handle the billing of patients, was discussed at length. The Executive Board does not believe the use of the Central Charge Service is in the best interest of physician-patient relationship and does not approve its use by physicians as a billing service.

Relative Value Study

In view of the need to revise the 1959 Relative Value Scale and bring it up to date, the Medical Care Committee will be requested to review the present Relative Value Scale and report its findings and conclusions to the Executive Board.

General News

The 115th Evacuation Hospital was awarded the Eisenhower Trophy during special ceremonies at the D. C. Armory, April 18. The Trophy, which is sponsored by former President Dwight David Eisenhower, is awarded the outstanding Army unit in each state. Colonel James E. Chapman, Commanding Officer, accepted the award from Undersecretary of the Army Stephen Ailes.

Colonel Chapman also received personal

recognition in the form of the General William E. Horton Award, which is a citation and a sum of money given to the outstanding Unit Commander in the D. C. Army Guard.

The 113th Air Tactical Hospital, under the command of Colonel William H. Beard, was one of 2 units which received the Major General W. H. Abendroth Trophy for achieving the highest ratings at field training last summer.

Colonel S. Ross Taggart, the Surgeon to the D. C. National Guard, retired after 31 years of Army and National Guard service. On the same occasion he was awarded the National Guard Meritorious Service Medal.

The Section on Anesthesia of the Medical Society of the District of Columbia has elected the following officers for 1963–64:

Dr. Howard Katzman, *Chairman-elect*; Dr. Robert R. Cross, *Vice President*; Dr. Charles E. Higbee, *Secretary*; and Dr. Joel Hoberman, *Treasurer*.

Dr. Ervin N. Chapman is the new Chairman. The electees assumed office on April 15.

At the Annual Dinner Meeting of the **D. C. Tuberculosis Association and the D. C. Thoracic Society,** which was held at the National Press Club, April 29, new officers were elected. For the Association they are: Mrs. Robert E. McLaughlin, President; Mr. Weston P. Figgins, Vice President; Mr. Harold J. Mayers, Secretary; and Mr. Bernard L. Amiss, Treasurer. Mr. William Becque continues as Executive Director.

Four physicians were among the 12 elected to the Board of Directors of the Association. Dr. Robert F. Donohoe and Dr. Kenneth M. Moser, new members of the Board, were elected to serve for a 3-year and a 2-year term, respectively. Reëlected for 3-year terms, expiring in 1966, were Drs. Milton Gusack and K. Albert Harden.

New officers of the Thoracic Society, medical section of the Association, are:

Lt. Colonel Joel H. Richert, MC, USA, *President-elect*; Dr. Harold M. Silver, *Vice President*; and Dr. Paul C. Adkins, *Secretary-Treasurer*.

Dr. K. Albert Harden took office as President of the Society for 1963–64.

All officers of **Group Hospitalization, Inc.** were reëlected for another year at the annual meeting of its Board of Trustees, March 29. They are: F. P. Rawlings, Jr., President; Mr. Howard W. Kacy, First Vice President; Dr. Ralph D. Whitley, Second Vice President; Mr. James H. Lemon, Secretary; and Mr. Douglas R. Smith, Treasurer.

Dr. Whitley was reappointed to the Board by the Medical Society of the District of Columbia. Mr. Rudolph Kauffmann II, Secretary of The Evening Star Newspaper Company, was appointed to the Board by the participating hospitals of GHI, and Mr. Harold D. Fangboner, Assistant Vice President of the Chesapeake and Potomac Telephone Company, was appointed to the Board by the D. C. Commissioners.

At the April 23 meeting of the **D. C. Allergy Society,** held at the Walter Reed Hospital Officers' Club, the following officers were elected:

Dr. Stanley I. Wolf, *President-elect*; Dr. Solomon E. Barr, *Secretary-Treasurer*; Drs. Richard H. Todd and Roland B. Scott, *members of Executive Committee*.

Dr. Harry A. Horstman, Jr., is the new President. Plans are under way to hold a series of dinner meetings with guest lecturers next year.

Dr. Moe Weiss, Superintendent and Medical Director of Glenn Dale Hospital, states that Glenn Dale is in need of **additional consultants in psychiatry.** Glenn Dale Hospital, a 600-bed chronic disease and tuberculosis hospital, operated by the D. C. Department of Public Health, is located 15 miles from Washington in Prince Georges County, Md. Consultants are paid $25 per visit. For further information call Dr. Weiss at Spruce 3-4000, extension 280.

Dr. Christopher T. Bever, Chairman of the Committee on Medical Journal Exchange, advises that a Spanish-speaking South American pediatrician of the University Hospital, Manizales, Columbia, S.A., is interested in an **exchange of journals** with a North American pediatrician. The former offers to send his colleague the *Revista Columbia de Pediatoria y Puericultura*. Details for effecting such an exchange may be secured from Dr. Bever at 3000 Connecticut Avenue, N.W.

The Woman's Auxiliary to the Medical Society of the District of Columbia elected officers, April 10. Mrs. Jonathan M. Williams, President-elect during the past year, will assume office as President on July 1. Serving with her will be:

President-elect: Mrs. Hugh O. House
First Vice President: Mrs. James Scully

Second Vice President: Mrs. M. Noel Stow
Recording Secretary: Mrs. Russell M. Tilley, Jr.
Assistant Recording Secretary: Mrs. Robert C. Haile
Corresponding Secretary: Mrs. Charles E. Bickham
Assistant Corresponding Secretary: Mrs. Gregory T. Henesy
Treasurer: Mrs. Joseph Daly
Assistant Treasurer: Mrs. D. Franklin Hodge.

Mr. Lawrence A. Zupan, Administrator of the Washington Clinic for the past year, has accepted an appointment as **Executive Secretary of the National Medical Foundation for Eye Care,** succeeding Mr. James E. Bryan. The headquarters of the Foundation have been maintained in New York City, but a Washington location will be secured when Mr. Zupan assumes his new duties, July 1. Prior to his work at the Clinic, Mr. Zupan was Assistant Secretary of the District Medical Society for 13 years.

The Foundation has a roster of some 2,800 ophthalmologists, or more than half the ophthalmologists in the United States. It is headed by Dr. William B. Clark, of New Orleans; Dr. J. Spencer Dryden, of Washington, is Vice President.

"Childhood Leukemia—a Pamphlet for Parents," prepared to be distributed by physicians to parents of leukemic children, has just been released by the National Cancer Institute.

Organized in 3 parts, the pamphlet includes information about the normal blood and its proper functioning; the symptoms, complications, and treatment of leukemia; and some of the problems children face during hospitalization. A glossary defines medical terms frequently used in discussing leukemia. Material for the pamphlet was drawn from a 2-year joint project of the National Cancer Institute and the National Institute of Mental Health, which involved the study of the psychological and physiological adaptations to chronic stress of parents of children hospitalized for leukemia at the Clinical Center.

Copies are available to physicians only, free of charge, from the Office of Information and Publications, National Cancer Institute, Bethesda 14, Md.

Dr. Jack C. Haldeman, Chief of the Division of Hospital and Medical Facilities, Public Health Service, **and Dr. Roy Hertz,** Chief of the Endocrinology Branch, National Cancer Institute, were among those honored, April 11, at the Annual Awards Ceremony of the Department of Health, Education, and Welfare.

Dr. Haldeman received the Distinguished Service Medal of the PHS Commissioned Corps for exceptional contributions in the development of hospital research and demonstration programs under the Hill-Burton Act. Dr. Hertz received the Department's Distinguished Service Award.

Personals

Dr. Nicholas P. D. Smyth became Chairman of the Department of Surgery at the Washington Hospital Center on May 16. As first full-time Chairman of the Department, he will organize, coördinate and implement the training programs in surgery and surgical subspecialties. He will also be responsible for all house officers assigned to the Department. Dr. Smyth is Assistant Professor of Surgery at George Washington University School of Medicine.

Dr. Richard F. Manegold, Director of Medical Education at Sibley Hospital, left Washington, June 1, to become Assistant Director of the Department of Medical Education and Hospitals of the American Medical Association at its headquarters in Chicago.

Dr. Manegold, a graduate of Harvard University, received his medical degree from Temple University School of Medicine in 1950. A specialist in internal medicine, he was Instructor in Medicine at Boston University, 1954 to 1957, and Clinical Instructor of Medicine at Georgetown University, 1957 to 1960. More recently he has been on the staff of George Washington University as Assistant Clinical Professor of Medicine. He has been an Active member of the D. C. Medical Society since 1957.

Dr. Joseph F. Belair has been named Vice Chairman of the Section on Radiology of the Southern Medical Association. A graduate of Georgetown University School of Medicine, Dr. Belair is Permanent Secretary of the Eastern Conference of Radiologists and is serving a third term as member of the Commission on Hospital Standards of the American College of Radiology.

Dr. Lawrence A. Pyle, Jr., Medical Department Officer of the Chesapeake and Potomac Telephone Company, has been appointed to the teaching staff of George Washington University School of Medicine as Assistant Clinical Professor of Preventive Medicine and Community Health.

Dr. Winfred Overholser, former Superintendent of St. Elizabeths Hospital, has been elected President of the Academy of Religion and Mental Health. The Academy is a nonsectarian agency to foster coöperation between religion, medicine and the behavioral sciences.

Dr. Charles W. Ordman was elected a Fellow of the American College of Physicians, March 31. Elected to Associate membership in the College were **Dr. William H. Knospe,** Washington; **Dr. Richard H. Pollen,** Kensington, Md.; **and Dr. Ira N. Tublin,** Silver Spring, Md. Dr. Pollen and Dr. Tublin are Associate members of the D. C. Medical Society.

Dr. Laurence H. Kyle, Professor and Chairman of the Department of Medicine, Georgetown University School of Medicine, visited Puerto Rico the latter part of February. During his visit he served as consultant to the Army Tropical Research Medical Laboratory, conducted Grand Rounds at the University of Puerto Rico School of Medicine, and lectured at the School of Medicine, the San Patricia Veterans Administration Facility, and at the San Juan City Hospital.

Fourteen members of the D. C. Medical Society participated as **judges for the D. C. Science Fair** on April 6. Dr. Warren D. Brill served as Chairman. Assisting him were Drs. Arthur S. Bresler, Clarence E. Bunge, Orville W. Donnelly, Nicholas S. Ionedes, Warren C. Johnson, Eloise W. Kailin, Lewis H. Kurtz, William Lewis, George W. Roark, Jr., Jack P. Segal, Meyer H. Stolar, Robert Stolar, and Warren J. Strudwick.

Dr. Donald W. Mitchell has been elected Commodore of the Rose Haven Yacht Club. The election took place at a special meeting of the Club's membership, April 20, to fill the unexpired term of Commodore Richard Curtin.

Dr. Mitchell is well known in yachting circles in the Washington area. He is Fleet Surgeon and Past Governor of the Capital Yacht Club and is an instructor in courses given by the Potomac River Power Squadron.

Dr. Evertt J. Gordon was recently elected to the Board of Governors of the Washington Figure Skating Club. Dr. Gordon has been a member of the Club since 1951 and is an avid figure skating enthusiast.

Obituaries

Herbert L. Phillips, M.D.

(1897–1963)

Dr. Herbert L. Phillips, who was Medical Examiner for the Pennsylvania Railroad Company and the Washington Terminal Company for many years, died, February 4, 1963. About a year ago he retired from duties because of ill health and moved to Clearwater, Florida, at 1040 South Fort Harrison Street.

Dr. Phillips was born in Spring Valley, Illinois, July 11, 1897, to Daniel T. and Emma C. Phillips. After attending schools in his home town, he studied for 2 years at the Illinois Wesleyan University in Bloomington, Ill., and spent a year at the State University of Iowa. He received his medical degree from the University of Nebraska in 1925. He interned at Douglas County Hospital in Omaha and also interned a year at Grant Hospital in Chicago.

Dr. Phillips practiced in Chicago, Ill., Fort Wayne, Ind., Canton, Ohio, and Indianapolis, Ind., before he came to Washington in 1945. His offices were at the Union Station.

He became an Active member of the Medical Society of the District of Columbia in 1947 and transferred to Associate when he moved to Florida in 1962. He belonged to the Industrial Medical Association and the Association of Pennsylvania Railroad Surgeons; he also was a Mason and a Shriner.

He leaves his wife, Mrs. Grace Robinson Phillips, of Clearwater, Fla.

Current Concepts in Infectious Diseases—Martin

(Continued from page 217)

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Information Explosion and Pharmacy—Smith

(*Continued from page 245*)

pletely eradicated and that a number of killers remain out of control, we know that there is work ahead. The problem is not less information, but rather making the proper information available to the person who most needs to know as speedily as possible. In this process, your role is vital.

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The Pastoral Institute—Zappala

(*Continued from page 248*)

President Kennedy has said, "We have the knowledge and the capacity to relieve great suffering and to rehabilitate untold numbers of our fellow citizens affected with mental disabilities." He has called for "comprehensive community health centers close to the homes of patients" and for ". . . the professional schools and societies and the research organizations . . . to develop new patterns of coöperation and action."

That too is the goal of the Pastoral Institute.

IN DIARRHEAS

Patient: W. O. **Age:** 45 **Sex:** F **Weight** 96

Diagnosis: Functional diarrhea

Results: Definite **Side Effects:** None

Comment: Patient has been on R-1132 (Lomotil) for fifteen months with definite improvement.

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Lomotil directly controls the *mechanism* of diarrhea. Therefore, it acts to give symptomatic relief in all diarrheas.

Lomotil promptly arrests acute diarrhea and controls chronic or refractory diarrhea with a high degree of safety.

Pharmacologic considerations indicate that Lomotil acts on the smooth muscle of the intestines and thus lowers the excessive propulsive motility responsible for increased fluidity and frequency of stools. This localized action makes Lomotil unusually free of secondary effects.

By reducing excess propulsive motility, Lomotil assures safe, selective symptomatic control of virtually all diarrheas.

Dosage: For adults the recommended initial dosage is two tablets (2.5 mg. each) three or four times daily. Lomotil maintenance dosage may be as low as two tablets daily.

Lomotil is supplied as unscored, uncoated white tablets of 2.5 mg. and as liquid containing 2.5 mg. in each 5 cc. A subtherapeutic amount of atropine sulfate (0.025 mg.) is added to each tablet and each 5 cc. of the liquid to discourage deliberate overdosage. Recommended dosage schedules should not be exceeded.

Note: Lomotil is an exempt preparation under Federal narcotic statutes.

Detailed information and directions for use in children and adults are available in Physicians' Product Brochure No. 81. G. D. Searle & Co., P. O. Box 5110, Chicago 80, Illinois.

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Slight drowsiness may occur with meprobamate and, rarely, allergic reactions. Meprobamate may increase effects of excessive alcohol. Use with care in patients with suicidal tendencies. Massive overdosage may produce coma, shock, vasomotor and respiratory collapse. Consider possibility of dependence, particularly in patients with history of drug or alcohol addiction. Withdraw gradually after prolonged use at high dosage.

Usual dosage: 1 or 2 400 mg. tablets t.i.d.
Supplied: 400 mg. scored tablets, 200 mg. sugar-coated tablets; bottles of 50.

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The latest report* in the *JAMA* on atherosclerosis diets states, "...it appears logical to attempt to reduce high concentrations of cholesterol and other serum lipids as an experimental therapeutic procedure."

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Mrs. Filbert's Corn Oil Margarine is a special margarine** made from 100% corn oil, over 50% of which retains its liquid characteristics.

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*AMA Council on Foods and Nutrition: The Regulation of Dietary Fat, *JAMA* 181:411-423 (August 4, 1962).

**AMA Council on Foods and Nutrition: Composition of Certain Margarines, *JAMA* 179:719 (March 3, 1962).

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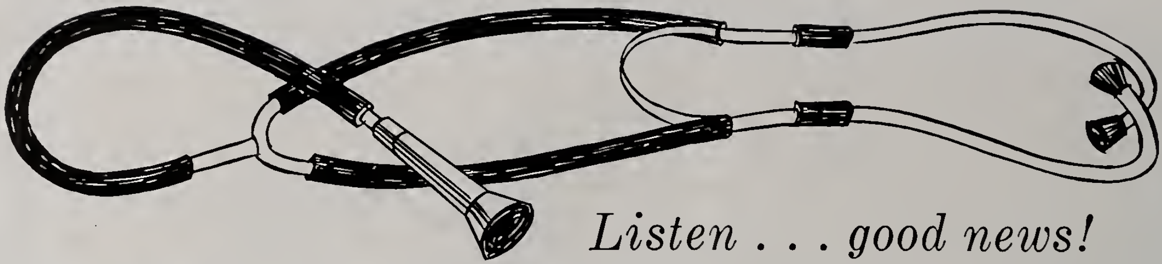

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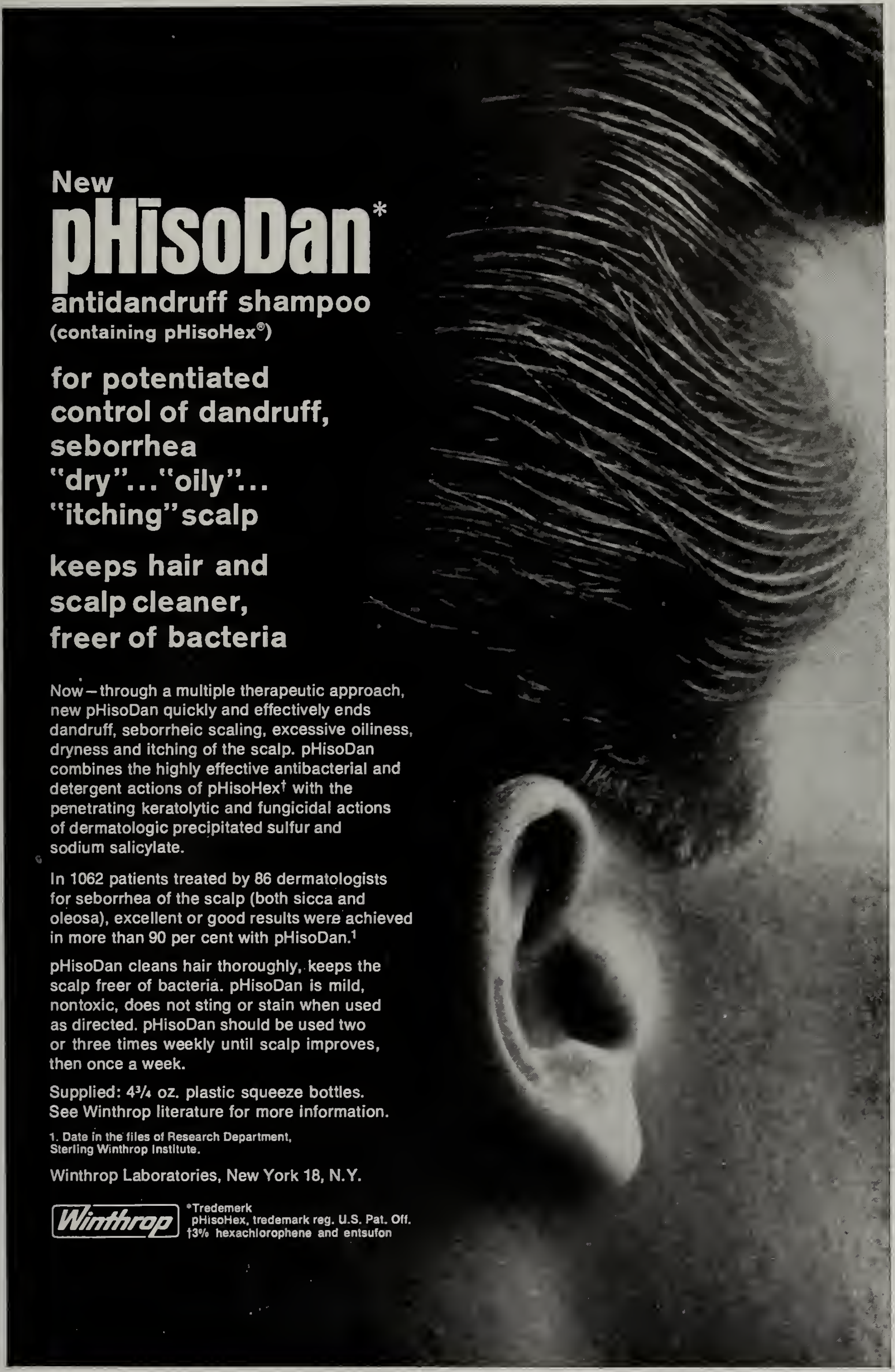

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1. Data in the files of Research Department, Sterling Winthrop Institute.

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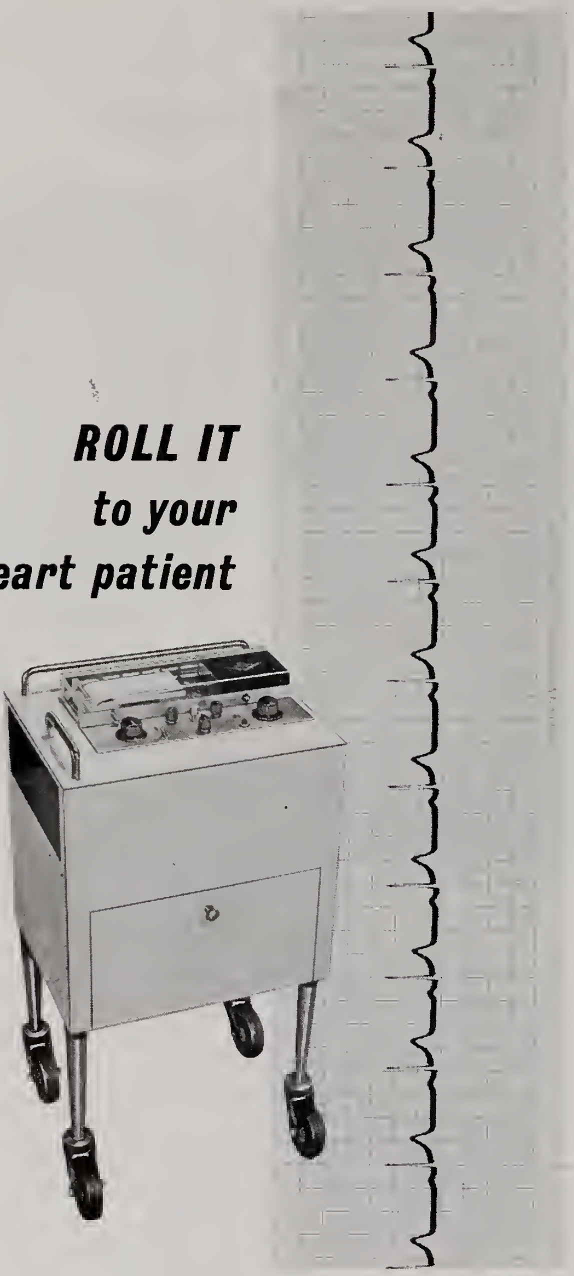

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BOOKS RECEIVED

Acknowledgment is made of the following books which have recently been received.

Clinical Metabolism of Body Water and Electrolytes. John H. Bland, M.D., and 21 Contributors. Price, $16.50. Pp. 623, illustrated. Philadelphia: Saunders, 1963.

Medical Department, United States Army: Surgery in World War II. Thoracic Surgery, Volume I. Colonel John Boyd Coates, Jr., M.C., Editor-in-Chief; Frank B. Berry, M.D., Editor for Thoracic Surgery; and Elizabeth M. McFetridge, M.A., Associate Editor. Prepared and published under the direction of Lieutenant General Leonard D. Heaton, The Surgeon General, United States Army. Price, $4.25. Pp. 394, illustrated. Washington 25, D. C.: Superintendent of Documents, U. S. Government Printing Office, 1963.

Current Therapy 1963: Latest Approved Methods of Treatment for the Practicing Physician. Edited by Howard F. Conn, M.D., with 12 Consulting Editors. Price, $12.50. Pp. 775. Philadelphia: Saunders, 1963.

Protein Metabolism: Influence of Growth Hormone, Anabolic Steroids, and Nutrition in Health and Disease. An International Symposium, Leyden, 25th–29th June, 1962, sponsored by CIBA. Edited by F. Gross, Basle. Chairman: A. Querido, Leyden. Pp. 521, with 159 figures. Berlin: Springer-Verlag, 1962.

Synopsis of Pediatrics. James G. Hughes, B.A., M.D. With the collaboration of 20 faculty members of the University of Tennessee College of Medicine. Price, $9.85. Pp. 1031, with 63 illustrations. St. Louis: Mosby, 1963.

The Management of the Anxious Patient. Ainslie Meares, M.D., B. Agr. Sc., D.P.M. Price, $9.00. Pp. 493. Philadelphia: Saunders, 1963.

Modern Clinical Psychiatry, 6th ed. Arthur P. Noyes, M.D., and Lawrence C. Kolb, M.D. Price, $8.00. Pp. 586. Philadelphia: Saunders, 1963.

Counseling in Medical Genetics, 2nd ed. Sheldon C. Reed, Ph.D. Price, $5.50. Pp. 278. Philadelphia: Saunders, 1963.

Physiology of the Circulation in Human Limbs in Health and Disease. John T. Shepherd, M.D., M.Ch., D.Sc. Price, $12.00. Pp. 416, with 179 illustrations. Philadelphia: Saunders, 1963.

Ciba Foundation Study Group No. 14. Intestinal Biopsy. Edited by G. E. W. Wolstenholme, O.B.E., M.A., M.B., M.R.C.P., and Margaret P. Cameron, M.A. In honour of Professor C. Jiménez Diaz. Price, $2.95. Pp. 120, with 53 illustrations. Boston: Little, 1963.

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June 16–22: Second International Congress on Medical Librarianship. Shoreham Hotel, Washington. Address: Executive Secretary, Second International Congress on Medical Librarianship, c/o National Library of Medicine, Washington 25, D.C.

June 24–27: American Orthopedic Association. The Homestead, Hot Springs, Va. Address: Dr. Lee Ramsay Straub, *Secretary*, 535 East 70th Street, New York 21, N. Y.

July 14–19: Second International Conference on Congenital Malformations. Americana Hotel, New York. Address: Mr. Stanley E. Henwood, *Conference Secretary*, 120 Broadway, New York 5, N. Y.

July 19–21: International Group of Doctors in Alcoholics Anomymous. The Greenbrier, White Sulphur Springs, West Va. Address: Dr. Lewis K. Reed, 2914 Southern Bldg., Youngstown 7, Ohio

August 4–9: International Conference and Exhibit on Aerospace Support. Sheraton-Park Hotel, Washington. Address: Dr. F. J. L. Blasingame, Executive Vice President, 535 North Dearborn Street, Chicago 10, Ill.

August 20–27: International Association for the Coördination of Psychiatric and Physiological Methods and Psychology. Washington, D. C. Address: Dr. José Germain, Institute Nacional de Psicologia Aplicada, Plaza de Santa Bárbara 10, Madrid 4, Spain.

October 13–18: Third International Congress of Plastic Surgery. Sheraton-Park Hotel, Washington. Address: Dr. Leslie H. Backus, Secretary-General, 217 Linwood Avenue, Buffalo 9, N. Y.

October 20–23: American College of Gastroenterology. Shoreham Hotel, Washington. Address: Mr. Daniel Weiss, Executive Director, 33 West 60th Street, New York 23, N. Y.

October 21–22: 1963 Scientific Session: Conference on Unusual Forms and Aspects of Cancer in Man. Biltmore Hotel, New York. Address: Dr. Roald N. Grant, Director, Professional Education, American Cancer Society, Inc., 521 West 57th Street, New York 19, N. Y.

November 4–6: Association of Military Surgeons of the United States. Statler-Hilton Hotel, Washington. Address: Brig. Gen. Frank E. Wilson, Executive Director, 1500 Massachusetts Ave., N.W., Washington 5, D.C.

November 18–20: Annual Scientific Assembly, The Medical Society of the District of Columbia. Statler-Hilton Hotel, Washington. Mr. George W. Cooley, Executive Director, 1718 M Street, N.W., Washington 6, D. C.

November 18–23: National Association for Mental Health. Sheraton-Park Hotel, Washington. Address: Mr. Philip E. Ryan, Executive Director, 10 Columbus Circle, New York 19, N.Y.

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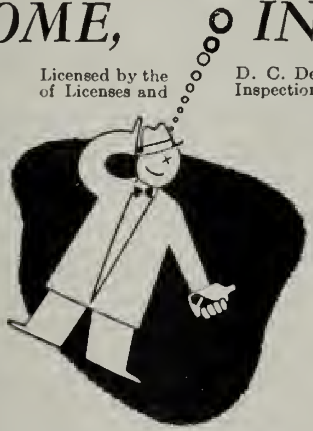

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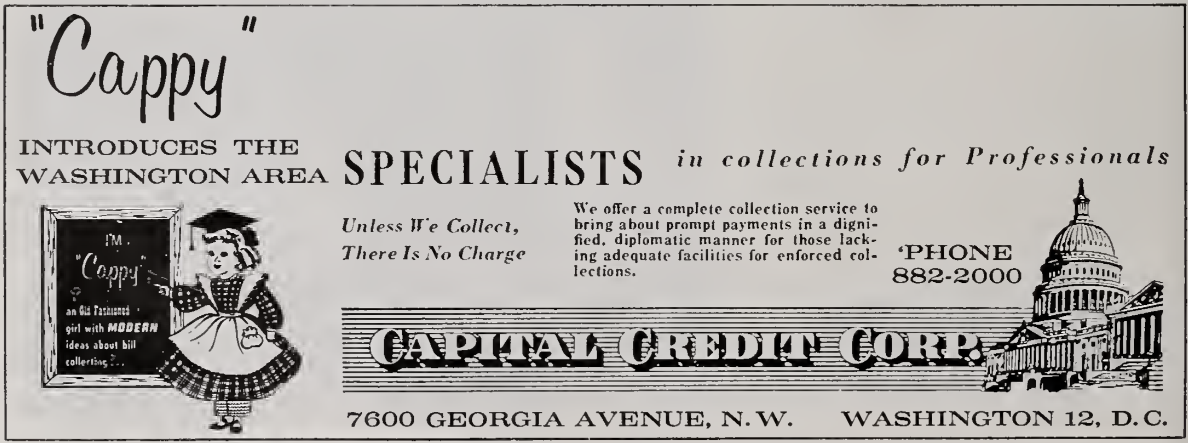
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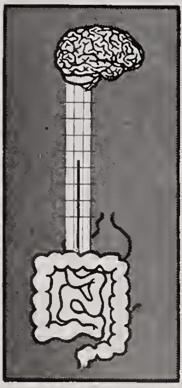

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